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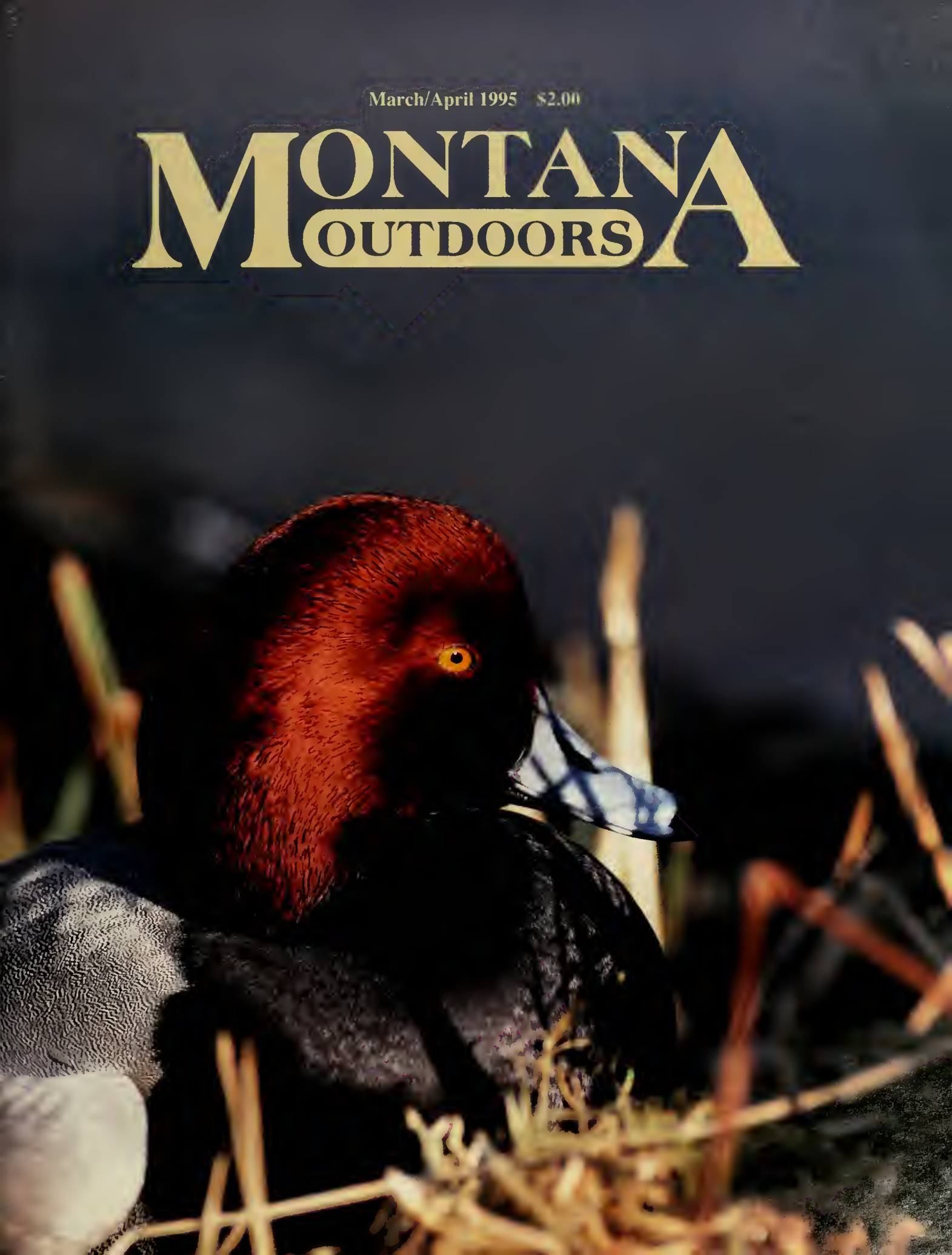
MONTANA OUTDOORS



Our Point of View

KEITH A. SZAFRANSKI

Mountain lion

A track in soft snow is all most people see of this secretive creature. Most active at night, mountain lions are efficient predators. Deer are a favorite prey.

Cougars are powerful runners, capable of incredible bursts of speed for short distances. Elusive yet persecuted, they once inhabited nearly every state in the country.

In Montana they carried a price on their heads for 80 years; the bounty was lifted in 1962. Today one bounty has been replaced with another—one of abundance and plenty.

Mountain lions are symbolic in many ways of changes that have taken place over the last 100 years in Montana. That is significant because it was 100 years ago that the 1895 Legislature created the Montana Board of Game and Fish Commissioners. It was a time of alarm for people who cared about and often depended on wildlife. Deer, elk, moose, and many more species had plummeted to near-extinction.

Today, thanks to regulations self-imposed on hunters, the fees they pay to manage wildlife, and the cooperation and efforts of landowners, numbers of deer, elk, bighorn sheep, and moose are at near-record levels. That is one reason we enjoy a new bounty of mountain lions today. Once-rare sightings are now common—though sometimes too close to home.

Mountain lions are also doing well because the bounty on their heads has been replaced with the recognition that they can be managed as part of the larger fabric of Montana's wildlife. To that end, the department is involving the public in a process to address the many questions and concerns that revolve around mountain lions. The challenges of 100 years ago have been replaced by new ones as we attempt to find balance—to maintain viable populations of cougars, to address concerns over safety, predation, and depredation, to manage lion numbers, and more.

We can only imagine the issues that will confront the Fish, Wildlife & Parks Commission a hundred years from now. Let's hope the wildlife legacy we leave today will be theirs tomorrow.

Patrick J. Graham, Director
Montana Fish, Wildlife & Parks

PETE & ALICE BENGEYFIELD

With their sharp talons and superior vision, ospreys are admirably adapted to the fishing life (page 10).

MONTANA OUTDOORS

March/April 1995
Volume 26, Number 2

FEATURES

2 A MONTANA TRADITION
by Tom Lemke
The once-controversial Gardiner late hunt has evolved into a safe and effective means of managing the northern Yellowstone elk herd.

10 WATCHABLE WILDLIFE—ARTFUL ANGLER
by Deborah Richie
The osprey, once in serious decline because of DDT, has staged a remarkable comeback.

16 DOWDY WINS 1995 WATERFOWL STAMP CONTEST
by William Phippen
Polson artist Wayne Dowdy's rendition of four tundra swans at Freezout Lake will grace this year's 1995 state waterfowl stamp.

19 LANDS LEGACY—PHEASANT HEAVEN
by John Fraley and John Grant
Western Montana bird hunters say Ninepipe Wildlife Management Area is hard to beat.

24 COUGAR
by John McCarthy and Jim Williams
Thanks to research and sound management, the future of Montana's mountain lions looks bright.

29 PERSPECTIVES—MONTANA FIGHTS TO SAVE WILD LIFE
by Thomas N. Marlowe
Montana's early fish and game commissioners faced challenges not so different from those of today.

DEPARTMENTS

31 CATCHALL—FWP Commission celebrates 100th anniversary
34 FROM THE FIELD—Orphaned black bears get a second chance
36 READERS RESPOND—Are wildlife photo subjects truly wild?
37 CONTRIBUTORS

COVERS—Redhead drake by Ron Spomer
Mountain lion silhouette by Bill McRae

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A MONTANA TRADITIO

by Tom Lemke

Some Montana hunting experiences have a rich and colorful history. A few have involved generations of hunters and created "larger than life" images, where fact and fiction mix like snow and wind through sagebrush. One such event, the Gardiner late elk hunt, encompasses all the above and much more, qualifying it as a unique Montana tradition.

The story of the Gardiner hunt is really a tale of two hunts. The early Gardiner hunts date back more than half a century to a time when life in Montana was simpler and harder, and when there were few rules to go by. These controversial, largely unregulated hunts ended in 1968 with a moratorium on late season elk hunting. The modern-day, strictly controlled hunts, which began in 1976, continue today as a much safer and more effective means of managing the northern Yellowstone elk herd.

ROGER TORY PETERSON

Previous page: "Fish & Game" headquarters for the Gardiner late elk hunt in the 1940s and 1950s was a cabin at what is now Eagle Creek Campground. Joe Gaab (second from right), one of Montana's first big game biologists and later a warden who oversaw the hunts, discusses strategy with three unidentified game wardens on a frosty morning in the late 1940s. Below: A popular Tom Hawkes postcard from the 1950s attests to the circus atmosphere of the early-day Gardiner elk hunts.

ILLUSTRATION BY TOM HAWKES, POST CARD COURTESY OF PARK COUNTY MUSEUM

THE EARLY DAYS

Joe Gaab worked for Montana Fish, Wildlife & Parks and its predecessor, Montana Fish & Game, for 32 years. He became one of the state's first big game biologists in the late 1940s, a time when only three biologists covered the entire state. Gaab, who later became a warden and eventually warden captain in charge of outfitter relations, worked the Gardiner late hunt for many years during the 1950s and 1960s.

Joe recalls that the late season "Fish & Game" headquarters in the 1950s was a tarpaper shack at what is now the Eagle Creek Campground. He and up to six wardens worked out of the cabin from January through March in some years. "It had a good stove, bunk beds, and we had at least four head of horses to work the hunt," he remembers. The snow was often two to three feet deep at the cabin with -20 to -30 degree temperatures when they saddled the horses before light. "The elk wouldn't come out of the park until there were three or four feet of snow in the Lamar Valley," he says.

For many years the late hunt began at 8:00 a.m. to coincide with the work whistle signal from the mines in Jardine. At one point the department bought a siren to start the hunts on time. The gate at Eagle Creek opened to a rush of vehicles and horses headed full blast up the narrow road for the hills. Minor collisions, arguments, and horse/vehicle conflicts were common. "When a vehicle would break down on the road, hunters from behind would push it out of the way with or without the owner's permission," Gaab says.

When huge groups of elk met with large numbers of hunters, the outcome was predictable. Hunters often killed several elk each, knowing they would be tagged later by others. Some people shared guns or didn't even have them. Herd shooting, particularly on Deckard Flats, was dangerous and led to the accidental shooting of hunters on what became known as the "Gardiner firing line." Says Gaab, "All you needed for the Gardiner hunt in those days was to wear red and have a tag."

Joe had the ability to open or close the season and change boundaries based on field decisions relayed to Helena by phone. "It was before the days of public meetings and much public review—you called the shots from the field based on what the animals were doing," he says. Joe made many decisions from horseback after talking the situation over with local outfitters and hunters.

Gaab also watched as the elk lost their migratory behavior, never moving far from the national park boundary because of constant hunting. "We needed to let the lead elk through and keep the memory bank alive, but people didn't want to hear that," he says. In those days the mandate was clear. "The park always wanted more elk killed and even started shooting elk themselves inside the park," Joe recalls.

Despite the dangerous hunting conditions and what today would be considered serious breaches of ethical conduct, some funny things happened at Gardiner. One day Joe asked a hunter on a high ridge in Eagle Creek why he wasn't dressing out his elk. The hunter replied that his buddy way down in the bottom had the knife and he was waiting for him. On his way back to the cabin in the bottom of Eagle Creek Joe found another fellow sitting beside his elk. Joe asked him the same question

PHOTO COURTESY OF PARK COUNTY MUSEUM

PHOTO COURTESY OF WAYNE HOPPE

Above: In the early 1900s, many hunters came to Gardiner by train. In this 1911 photo, Pete Nelson, one of Montana's first game wardens, is pictured fourth from right. Opposite: Early model Fords reliably transported hunters and elk in this circa 1940 photo taken near Jardine.

about dressing out his elk. The fellow pointed to the hunter way up on the ridge and said that his friend had the only knife and he was waiting for him to come down.

Joe Lawellin, another veteran of the early Gardiner hunts, is a Park County native, born and raised near the Crazy Mountains. He has been a hunter and outdoorsman for most of his 76 years. Joe worked for the Northern Pacific Railroad in Livingston as a diesel shop foreman for 20 years, and later ran the Mission Field Air Service. Joe is currently president of Montana Sportsmen, Inc., a local club active in public land access issues.

Lawellin started hunting near Gardiner in the 1930s with his father, who had been hunting the area since the early 1920s. Many elk hunters in the early days came from Butte, East Helena, and Billings, recalls Joe. In the 1930s they all had one thing in common: "They were meat hungry and didn't have the price of beef, even though it was cheap." Every nationality from the mines in Butte and the smelter in Helena hunted in Gardiner. "Lots of them couldn't speak English very well, but they all knew how to have a good time," he chuckles.

Some years tent cities sprang up at Eagle Creek and Little Trail Creek. Wall tents and wood stoves were the order of the day. Model A Fords were the common vehicle for traveling up the Jardine Road and out onto Deckard Flats. "With chains the Model A's would go just about anywhere," says Lawellin, "through deep snow and sagebrush. Model A's and T's were perfect for dragging out elk."

For a short time the National Park Service participated in "put and take" elk hunting, recalls Lawellin. Elk trapped inside the park were transported by stock trucks to a corral in Eagle Creek. At 8:00 a.m. they were chased out to a waiting line of hunters who pursued them up the slopes on horseback, jeeps, and "weasels" (early day ATV's). It was a feeble attempt to provide a safer, more "sportsmanlike" hunt compared with Deckard Flats. The powerful Rocky Mountain Sportsmen Club in Butte protested the practice and it quickly ended.

Joe's father hunted in Gardiner when most people came by train. People would stay overnight at "guest houses" in Corwin Springs and have their elk carried to the train on horse-drawn hay wagons. Taking an elk home didn't always involve shooting one. Joe recalls that people with an elk tag could often buy an elk for $5 from the locals. Firewood cutters would shoot and drag out several elk during the week and sell them on weekends. Enterprising lads could earn spending money by dressing out elk for wardens or hunters at 50 cents each, he remembers. "One day I dressed out about 50 elk and felt pretty rich," he says.

PHOTO COURTESY OF WAYNE HOPPE

A Livingston hunter poses proudly with a cow elk in the 1940s. Because meat was the primary consideration, cows were preferred over bulls.

Another area resident, 68-year-old Wayne Hoppe, has a long familiarity with the Gardiner hunts. Born near Gardiner on a homestead on Stephens Creek (now located inside Yellowstone Park), Wayne ran an outfitting business for many years that his son Bill now carries on. He also worked for the National Park Service, retiring after many years of seasonal and full time work.

"My grandfather and father were both outfitters," says Wayne. "Our family has been involved with elk and elk hunting for over 90 years. My grandfather was one of the first people in the country to ship live elk on train cars in the early 1900s." Wayne killed his first elk at age 10 and started guiding for his dad in 1939. "There were a lot of twenty- to thirty-below-zero days when you headed out on horseback, and winters were just a lot colder, longer, and tougher in those days. In the spring it wasn't uncommon to have six or seven feet of snow left on the ground in places.

"People didn't have good clothes and warm boots and you had to light fires to keep your clients warm. A day's pay for guiding in the 1950s was $18. These guides today make more money in a week than I made all season long."

Wayne recalls that his wife Pat "thought she was marrying a millionaire at first, but some years we almost starved to death." Pat remembers scouting the Jardine road day after day for elk that never showed up. It was a tough way to make a living. "Everyone wanted to shoot a cow elk, because they depended on the meat. If they shot a bull, the first thing they did was knock off the antlers with an axe so it would drag easier," says Wayne. He recalls leaving tremendous seven and eight-point elk racks in the woods.

In October of 1946 an unusually early winter drove Wayne out of his backcountry camp in Hellroaring Creek. Deep snows set the stage for one of the largest elk harvests on record. When the late season began on January 1, large herds of elk had been in Eagle Creek for weeks. Wayne and others (Joe Lawellin was there) will never forget that day. Between 8:00 a.m. and noon an estimated 1,180 elk were killed. The season was closed three days later after 3,000 to 4,000 elk had been taken.

"In those days the Fish and Game Commission would fight with the Park

SUSAN SMELANA

Modern-day participants in the Gardiner late hunt have many options: hunting on foot or on horseback; hunting near a road or traveling into the backcountry; and hunting on their own or hiring a guide.

Service over harvest quotas," says Hoppe. "The park always wanted more and more elk killed." Wayne sympathized with Joe Gaab and others who tried to change boundaries and seasons to please people and keep it safe. "At times there would be 1,000 to 1,500 hunters on Deckard Flats and it was like a war," he recalls. "It got so bad guides hated to go out there. When they finally closed Deckard, it was the best thing in the world."

Like Lawellin and Gaab, Hoppe remembers humorous moments. One cold winter day he wallowed through chest-deep snow up a steep slope to reach an elk his hunter had shot. Suddenly there was another shot and an elk fell dead nearby. More than a little irritated, he yelled down, "Stop your shooting you %X*@#! or you'll have to come up here and gut these elk out yourself." The shooter turned out to be Wayne's mother-in-law.

Wayne still keeps close track of the Gardiner hunt as elk migrate through his "front yard." "Elk are entirely different now," he says. "Before you couldn't drive them north because of the intense hunting pressure. Now their migratory behavior has returned because of fewer hunters, new regulations, and winter range acquisitions. Things are much better now for the hunters and the elk."

The first chapter of the Gardiner late hunt ended abruptly in 1968 in a cloud of political fallout, triggered largely by the controversial policy of culling elk inside the park. By then the northern Yellowstone elk herd was down to about 3,000 animals, with fewer than 100 elk shot by hunters in some years. By today's standards, the early Gardiner hunts seem like sanctioned insanity, but one must remember the very different social and political environment of the times. It was well before the days of ecosystem management, elk security concerns, and the anti-hunting movement. For people who experienced the early Gardiner hunts it was clearly memorable. As Joe Lawellin remarked, "You should have been around to see it with your own eyes, boy. We sure had some interesting times."

MODERN-DAY MANAGEMENT

The 1968 moratorium on late elk hunting at Gardiner provided an opportunity to correct problems that had developed over the years. By 1975 the northern Yellowstone elk herd had rebounded from about 3,000 animals to over 12,000, and the elk had resumed migrating outside the park. It was time to rethink how the late hunt should be managed.

The major problems with early-day Gardiner hunts included human safety and ethical concerns, loss of migratory behavior and reduced use of historic elk winter range, and the inability to regulate and track the number and sex of elk harvested. A radically different approach that would allow greater control over hunting conditions and elk harvest was in order.

Beginning in 1976 the Gardiner hunt became a permit-only hunt, with antlerless and either-sex elk permits issued through a statewide drawing in August. This gave FWP biologists the ability to limit the number of hunters and also to manage the size and composition of the elk herd. Initially, either-sex and antlerless permits were issued in equal numbers, but over time the philosophy of the late hunt shifted from providing trophy hunting opportunities to managing elk numbers by harvesting more cows and calves. Presently, less than 5% of the elk permits are either-sex.

To reduce congestion and make the hunt safer, managers now limit the number of hunters by time period. Antlerless permits are issued for a specific two-day period, while either-sex elk permits are issued for a four-day period. Hunters are evenly distributed over the 28-day late hunt season. At current permit levels, a maximum of 205 hunters could be in the field at one time, compared with over 1,000 per day during some of the early hunts.

The challenge of preserving a consistent elk migration and ensuring elk use of winter ranges north of the park has been addressed several ways. First, the Deckard Flats area has been closed to late season hunting to provide a buffer zone and staging area for elk when they first leave the park and allow them undisturbed use of available food before they move farther north. Second, alternating three-day rest periods with four-day hunting periods allows elk to migrate northward with less disturbance. Third, establishment of four late hunt units and regulating when they are open or closed ensures that migrating elk have reached these units prior to late season hunting. This relieves pressure on local elk that are more vulnerable to harvest before migrants arrive.

Delaying the opening of the late season has also protected local elk and improved hunter success. When the hunts resumed in 1976, the season typically started in mid-December. Because in many years the migration had not started by then, success was low and most of the elk harvested were from local herds. Today the late hunt begins the first Friday after New Year's Day, which in most years provides sufficient numbers of migrant elk.

Basing permit numbers on aerial population surveys and trends in the number of elk that leave the park helps managers lessen the impact that elk have on winter range vegetation. Harvesting primarily female elk also allows greater control of elk numbers than the earlier custom of harvesting large numbers of bulls. Permit numbers are discussed annually with biologists from the Gallatin National Forest and Yellowstone Park before they are submitted to the Montana Fish, Wildlife & Parks Commission for approval. Extra permits can be added during the hunt under certain circumstances. Such was the case in 1989, when over 1,300 permits were added after it became clear that many elk would starve to death. That winter hunters harvested more than 2,300 elk during the late hunt.

Late hunt oversight and record-keeping have improved greatly from the days of the Eagle Creek "tarpaper shack" and roving horseback patrols. Each hunter is now required to check in and out at the Slip and Slide Check Station, a modern facility located 12 miles north of Gardiner on Highway 89. Every elk harvested is checked by FWP personnel to determine its sex,

BILL THOMAS

Delaying the opening of the late hunt until early January ensures a consistent elk migration out of Yellowstone Park onto winter ranges farther north.

where it was killed, when it was killed, its approximate age, if it was pregnant, if it was lactating, sex of the fetus, and the field-dressed weight of calf elk. Blood and tissue samples, fetuses, and fat measurements are sometimes collected to monitor wildlife diseases, elk conception dates, and body condition.

The Gardiner late hunt has evolved into one of the most closely regulated and successful elk hunts in North America. Despite all the special restrictions, more than 7,000 hunters apply for Gardiner permits every year. Since 1984, the annual elk harvest has averaged 1,018. Hunter success rates have exceeded 90% twice in the last 10 years, with an average success rate of 59%. This compares with statewide elk hunting success rates of 16% to 29% over the same period.

Because permits can be drawn by parties of two people together, the late hunt has become a tradition for families and friends. Owing to high success rates, Gardiner is a popular place for young hunters hoping to take their first elk. Most hunters are repeat customers whose stories fill the check station. The social atmosphere surrounding the late hunt is largely devoid of the competition and pressure sometimes associated with general season elk hunting. People tend to share information and help one another.

Since 1976, the modern Gardiner late hunts have attracted new generations of elk hunters to the same windblown sagebrush slopes walked by so many before them. The train no longer carries well-armed passengers or field-dressed elk, there are no more vehicle-versus-horse races at the sound of a siren, nor do the likes of Joe Gaab or Wayne Hoppe ride the hillsides anymore, yet scores of people still come to Gardiner in search of things that are important to them—elk, companionship, and fond outdoor memories. Many still find exactly what they are looking for and return year after year. Joe Lawellin has to be pleased to know that the tradition he and his father enjoyed is alive and well. Folks can still experience "some interesting times" at Gardiner. ■

TOM LEMKE

HUNTER'S GUIDE TO THE LATE HUNT

Where: The Gardiner late hunt is held in H.D. 313 and a small part of H.D. 314, located 50 miles south of Livingston.

When: The late hunt begins the first Friday after New Year's Day. Hunting is allowed Friday through Monday for seven consecutive weekends into mid-February. Hunters with antlerless permits are randomly assigned a specific two-day hunt (Friday/Saturday or Sunday/Monday), while either-sex permit holders are assigned a Friday-Monday hunt.

How to Apply: Applications for either-sex (313-02) and antlerless (313-03) permits must be mailed by June 1 using application forms available at license dealers and FWP offices. Two hunters may apply together as a party. Elk permits cost $6, with a $3 nonrefundable application fee.

Drawing Odds: In 1993, 3,525 people applied for 105 either-sex permits, for a success rate of 3% (1 out of 33); and 4,497 people applied for 2,660 antlerless permits, for a success rate of 59% (1 out of 1.7). These odds are typical of the past 5 years.

Participation and Harvest Success: Roughly 70% of permit holders participate in the hunt. In recent years that translates to 130-160 hunters in the field every two days. Harvest rates have averaged 59% over the past 10 years, exceeding 90% twice and ranging from 20% to 95%.

Access: Good access exists to large blocks of national forest and state-owned lands. Access information and maps are provided at the check station.

Opportunities: Hunters can choose to hunt close to roads or travel into the backcountry; hunt on their own or hire a guide; hunt on foot or on horseback; and hunt in near proximity to other people or get away from them. Information on terrain, weather, and local guide services is available at the check station during the hunt.

Outlook: Yellowstone elk numbers are at modern-day highs (20,000-plus elk), and large migrations have led to relatively high permit levels since 1990. The outlook is for continued high permit numbers and success rates; however, occasional mild winters may result in late migrations and difficult hunting. Hunters are encouraged to call the check station for a status report before leaving home.

Artful Angler

by DEBORAH RICHIE

"It was a spring without voices. On the mornings that had once throbbed with the dawn chorus of robins, catbirds, doves, jays, wrens, and scores of other bird voices there was now no sound; only silence lay over the fields and woods and marsh."

—Rachel Carson

SEVEN YEARS BEFORE Rachel Carson's *Silent Spring* shook the country with these prophetic words in 1962, another notable naturalist detected something gone awry within the osprey colonies near his Connecticut home.

Roger Tory Peterson knew his ospreys as familiar neighbors. In fact, in 1954 he counted 150 occupied nests within a 10-mile radius. The next year he made a startling discovery while surveying an enormous colony on Great Island, where the Connecticut River mingles with the sea. It was the first week of July and there was silence in the colony. Where was the cacophony of begging nestlings and attentive females? Why weren't the males making their tireless journeys from sea to the nest, laden with fish? There were no young to be seen.

Peterson remembered that his friend Charles Broley had noticed a similar phenomenon among bald eagles near his Florida home and suspected that the eagles were eating fish poisoned with DDT. His hunch was that DDT affected the eagles' ability to nest successfully. Sadly, Broley died of a heart attack soon after and never had a chance to investigate.

Peterson decided to take up the study right away through two of his Yale graduate students, Peter Ames and Tom Lovejoy. It didn't take them long to verify the link to DDT, which causes thinning of eggshells and crushing of the eggs by incubating parents. By the time *Silent Spring* hit the streets, only nine of the original 150 pairs remained near Peterson's home. Between 1950 and 1975, the number of osprey pairs dotting the coast from New York City to Boston dwindled from about 800 to fewer than 80.

The tie between ospreys and DDT led a group of lawyers to sue the Long Island Mosquito Control Commission. Successful in banning DDT use there, the lawyers formed the Environmental Defense Fund, and went on to push for a nationwide ban. Backed by a public outcry against the loss of ospreys, eagles, and hawks, their efforts led to victory in 1972: an end to DDT use in this country.

A couple of thousand miles away from the Atlantic, Montana's ospreys also had suffered from heavy use of pesticides. According to Dennis Flath, nongame coordinator for Montana Fish, Wildlife & Parks (FWP), ospreys

W. STEVE SHERMAN

BRAD GARFIELD

Widespread spraying of DDT and other chlorinated hydrocarbon pesticides in the 1950s and 1960s caused drastic declines in osprey populations due to eggshell thinning and crushing of eggs by incubating parents. Thanks to a nationwide ban on DDT in 1972, these graceful birds have staged a remarkable comeback. Today there are more than 500 nesting pairs of ospreys in Montana, up from about 150 in 1978.

declined more severely in some places than in others, depending on exposure to DDT and other chlorinated hydrocarbons. During the 1950s and '60s, coniferous forests were sprayed liberally in an attempt to rid the trees of the tussock moth and spruce budworm. Not surprisingly, ospreys along the heavily wooded shores of Flathead Lake started disappearing. In other places, the wonder chemical was used on farm fields and for mosquito control. The persistent DDT ended up in the waters, then traveled from crustaceans to fish to ospreys, becoming a deadlier brew at each successive level.

DDT heading through the food web sent peregrine falcons spiraling perilously close to extinction. Ospreys proved more resilient. In 1978, Flath estimated there were 149 pairs in Montana. Without the intensive restoration efforts that have marked the return of the peregrine and bald eagle, that population has climbed to about 550 pairs. Today we think of the osprey as a common spring arrival, whose presence eases the pain of April 15 (tax day).

Ospreys are as much a part of our rivers, reservoirs, ponds, and even some of our cities as the rain, sun, and wind. From a restaurant window in downtown Missoula, we can watch the regal white-and-black birds plunge for fish, or thrill to their headlong dives from a lakeshore campsite in the Bob Marshall Wilderness. Across much of the state, their bulky stick nests grace the tops of dead trees, power poles, platforms, bridges, and cliffs like beaver lodges miraculously lifted from the waters.

It is not surprising that our most watchable bird of spring, summer, and fall also should be the signal bird leading ultimately to the ban of DDT. I say "our" and have to smile, wondering how many peoples of the world claim the ubiquitous osprey as their own. Even Montana's birds spend more than half their life south of the U.S. border. There, they are not yet safe from DDT and other toxins.

THE OSPREY is cosmopolitan. Found on every continent except Antarctica, its scientific name, *Pandion haliaetus*, stems from Greek myth. Pandion was a king of Athens for a short time before his exile, but found honor after death in a hero's shrine on the Bluff of Athene the Diver-Bird. Haliaetus comes from the Greek *hals* (salt or sea) and *aetos* (eagle). Considering the extent of the osprey's domain on our watery planet, perhaps it would have been more fitting to name the bird after a mighty ruler like Alexander the Great.

Fossil evidence suggests ospreys have cruised the waters for the past 10 to 15 million years. With that long record of evolution, it's little wonder they are so admirably adapted to the fishing life.

Their talons form a wicked vice for gripping fish. The osprey's outer toe, unlike that of any other hawk or eagle, reverses position so the bird can grasp fish with two toes forward and two toes back. Each toe is strewn with stubby spines that help hold a wriggling, slippery fish. The talons, curved and razor sharp, snap shut in 2/100ths of a second.

Watching an osprey soar some 100 feet above a lake, I can imagine its brilliant yellow eyes scanning the waters, registering the tiniest glint of a fish. There's the hover, followed by the dive—a blur of feathers whizzing earthward. At the last moment, feet swing forward, wings back, and the bird splashes into the water, sometimes submerging completely. Too buoyant to venture far underwater, the osprey overcomes this disadvantage with lanky legs and long talons. Climbing sky-

Mated for life, ospreys add sticks to their massive treetop nests when they return to Montana each spring. Females lay one to four eggs in April or May; by the time the nestlings fledge in August, they have only about a month to hone their flying skills before southward migration.

JIM MCPHAM

ward, the successful angler shakes its wings and body like a wet dog and deftly arranges the fish headfirst, for aerodynamic flying.

I've also watched ospreys surface repeatedly with empty talons at Lee Metcalf National Wildlife Refuge near Stevensville, Montana. At such times I find myself rooting for each dive as if the bird were a batter with a two-strike count. This is my kind of sporting event.

As any serious angler will tell you, there are many subtleties to successful fishing. You have to know where the fish will be, how to read the water, recognize insect hatches, and finally how to cast. Ospreys have their own highly evolved secrets leading to the perfect fishing day.

Erick Greene, biology professor at University of Montana, studied foraging strategies on the coast of Nova Scotia during the early '80s. He found that ospreys deliberately choose where to fish, what to fish for, and how far to fly. When a school of plump pollock swam into the estuary, the birds ignored all other fish and feasted only on this infrequent bonanza. At other times, if smelt or alewife were spawning in the river, the ospreys might fly as far as 20 miles upstream to fish for them. However, if these fish weren't present, they settled for their year-round, small, hard-to-catch staple: winter flounder. Flounder are so well-camouflaged along the bottoms of shallow bays that ospreys aim for puffs of mud betraying a swimming fish.

Acute vision and nesting in colonies also play key roles in fishing decisions, Greene found. Ospreys could identify

SCOTT MCKINLEY

Canada geese (right) sometimes claim osprey nests, setting the stage for heated confrontations. Composed of sticks and adorned with miscellaneous items (in this case plastic baling twine), an osprey nest (far right) can weigh half a ton after decades of additions.

JAN L. WASSINK

MICHAEL H. FRANCIS

the kind of fish a returning bird gripped in its talons from as far as a mile away. If they spotted a pollock, there would be a sudden frenzy of departing birds. If it were a flounder, well...staying perched seemed just fine.

BIOLOGIST PAT MULLEN compared the behavior of pond-nesting and river-nesting ospreys in the Bitterroot Valley for two seasons in the early 1980s. He watched 10 pairs nesting mostly in ponderosa snags close to the Lee Metcalf refuge ponds and 13 to 15 pairs nesting in black cottonwoods along the Bitterroot River. The pond birds actually defended their fishing grounds for bass and perch from the river birds, who caught trout, whitefish, suckers, and squawfish.

Canada geese caused the real havoc, however. These presumptuous birds had a habit of sneaking in before ospreys arrived and claiming the treetop nests for their own. Mullen noted that the geese delayed the start of osprey nest construction on half of the 49 nests. Some ospreys gave up and built new nests in adjacent trees. Others relentlessly pursued the geese until the honkers left.

Mullen wasn't the first to describe the bizarre competition between Canada geese and ospreys. Flath witnessed the following drama on the Bitterroot River, as he reported in *The Auk* in 1972:

> In 1969, a pair of ospreys apparently evicted a nesting pair of geese that had occupied the nest before they arrived. The gander, however, refused to abandon his post and defended his territory despite frequent harassment. On one occasion this gander with two other geese flew directly toward the nest. One goose dove at the osprey sitting in the cup of the nest; the goose's breast missed the osprey's head by only a few inches. The ospreys immediately gave chase, but the attacking goose made two more passes at the nest when an osprey tried to land. Meanwhile, a third osprey came in from the north and joined the fracas. The geese and ospreys chased one another for a full minute, at times resorting to complicated aerial maneuvers. The conflict ended with the ospreys chasing the geese away and reclaiming the nest.

The annual spring ritual of vying for nests continues in the 1990s, as does an elaborate courtship. Ospreys choose lifelong mates. Each year when the slender-winged migrants return from the tropics, they renew their bond to one another. Males demonstrate flying skills.They tenderly offer fish to their partners. The pair then proceeds to build or add to its massive, wind-resistant home. The mass of sticks we see from below hides a soft hollow inside lined with grasses.

Nests also reveal packrat tendencies. Researchers have found dolls, hula hoops, bicycle tires, flannel shirts, and rubber boots crammed into nests that can weigh as much as half a ton after decades of additions. Nests reveal a bit of history, too. A naturalist in 1892 described these finds: toy sailboat with sail attached, barrel stave and hoop, blacking brush, and boot jack. Unfortunately, today's ospreys sometimes seize plastic bags and fishing line that can suffocate or strangle nestlings.

Nesting season spans most of

ALAN & SANDY CAREY

Guardians of fish-filled waters, ospreys are as much a part of our rivers, reservoirs, and ponds as the rain, sun, and wind.

Montana's late spring and summer. The female lays one to four eggs (usually three) in April or May, and hatching takes place by mid-June. By the time the nestlings become fledglings in August, they have only one month to practice flying before migrating in mid-September. The adolescents make up for the rush by lingering in the tropics a full 18 months before flying the thousands of miles back to Montana. They will not breed until they are 3 years old. Only about one out of every three young ospreys survives its first four years, and then could live for a quarter century.

Ospreys serve as guardians of fish-filled waters. Their supreme adaptability to people takes the wild to human doorsteps. One of the densest congregations on the East Coast is in Pelham Bay, part of New York City. There, city dwellers pause to see the spectacle of ospreys striking the water within 50 feet of shore. In such moments, we may reflect upon the wonder of species other than our own. In fact, a study of osprey watchers at Pelham Bay traced the building of a conservation ethic over the course of four years leading to appreciation and support for protecting the integrity of the bay.

A shy pair of ospreys nesting on a broken-topped pine by a remote lake or a bold urban pair on a platform above the highway remind me of how different people are from each other. There are some of us who yearn for wildness and others who thrive in cities. And like the osprey, we become one in our dependence upon clean, good waters across the planet. ■

Watchable Tips

The best place in Montana to see high numbers of ospreys is the Flathead Valley (particularly along the north shore of Flathead Lake, and the wetlands between the lake and Kalispell). Take the road from Somers to Bigfork in spring and summer for excellent views of nesting ospreys.

Other hotspots include the Bitterroot Valley, the Clark Fork River, Hebgen Lake, and the Missouri River and reservoirs between Toston and Wolf Creek.

Months to see ospreys: April through September.

Time of day: Any time is a potential osprey fishing hour.

What to look for: White underparts and black eyestripe. Black carpal (wrist) patch on underwings.

Ethics: Avoid approaching nests. If you are in your car, use the vehicle as a blind. Move away if you hear an alarm call—short, clear, descending whistles. While some birds are tolerant of human presence, others are not, so never make assumptions about their tameness.

PETE & ALICE BENGEYFIELD

First place—Wayne Dowdy

DOWDY WINS

1995 Waterfowl Stamp Contest

by William Phippen

Wayne Dowdy's colorful rendition of four tundra (whistling) swans set against a dramatic backdrop of the Rocky Mountain foothills west of Freezout Lake Wildlife Management Area (WMA) has been selected for reproduction as Montana's 1995 state waterfowl stamp.

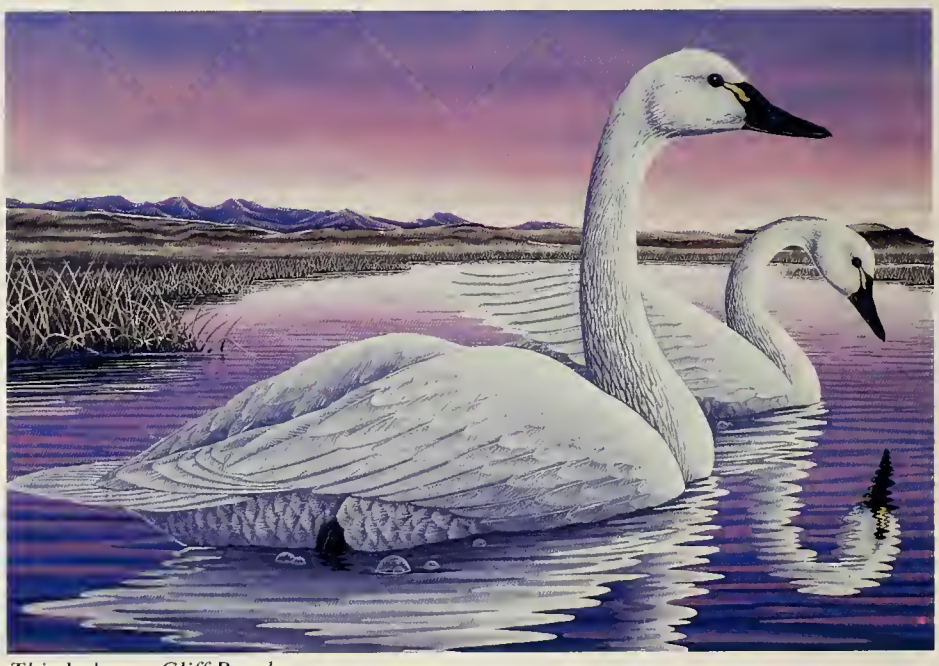
The Polson artist's painting, the first he has submitted to Montana's annual stamp competition, was selected from among 14 entries by a team of five judges in September. Placing second and third, respectively, were paintings by Jim Borgreen of Lewistown and Cliff Rossberg of Great Falls.

As has been the case since its inception in 1986, the competition was open only to Montana residents. All entrants had to confine their works to a central theme—for 1995, not more than four tundra swans at Freezout Lake WMA, a stopping point for thousands of the large, white birds on their migrations south each autumn. Contest rules stipulate that entries be unsigned and that entrants remain unidentified until ballots have been tabulated.

Now a full-time wildlife artist, Dowdy, who came to Montana three years ago from his native Oregon, is a former powerboat designer, builder, and racer who also spent a number of years as a commercial and architectural illustrator. Yet, it was this self-taught painter's love of the outdoors and wildlife, particularly waterfowl, that steered him toward his present career some 15 years ago.

That career has been very successful. Dowdy's depictions of waterfowl, big game animals, and other outdoor scenes have earned him acclaim as well as numerous awards and can be viewed in fine art galleries throughout the United States. He was named "Artist of the Year" by Oregon Ducks Unlimited (DU) in 1987, 1989, and 1992, and one of his paintings was selected for Oregon DU's "First-of-State" Wetlands Conservation Print and Stamp in 1990. Another will be reproduced as the 1994-95 conservation print and stamp for the Canadian province

Second place—Jim Borgreen



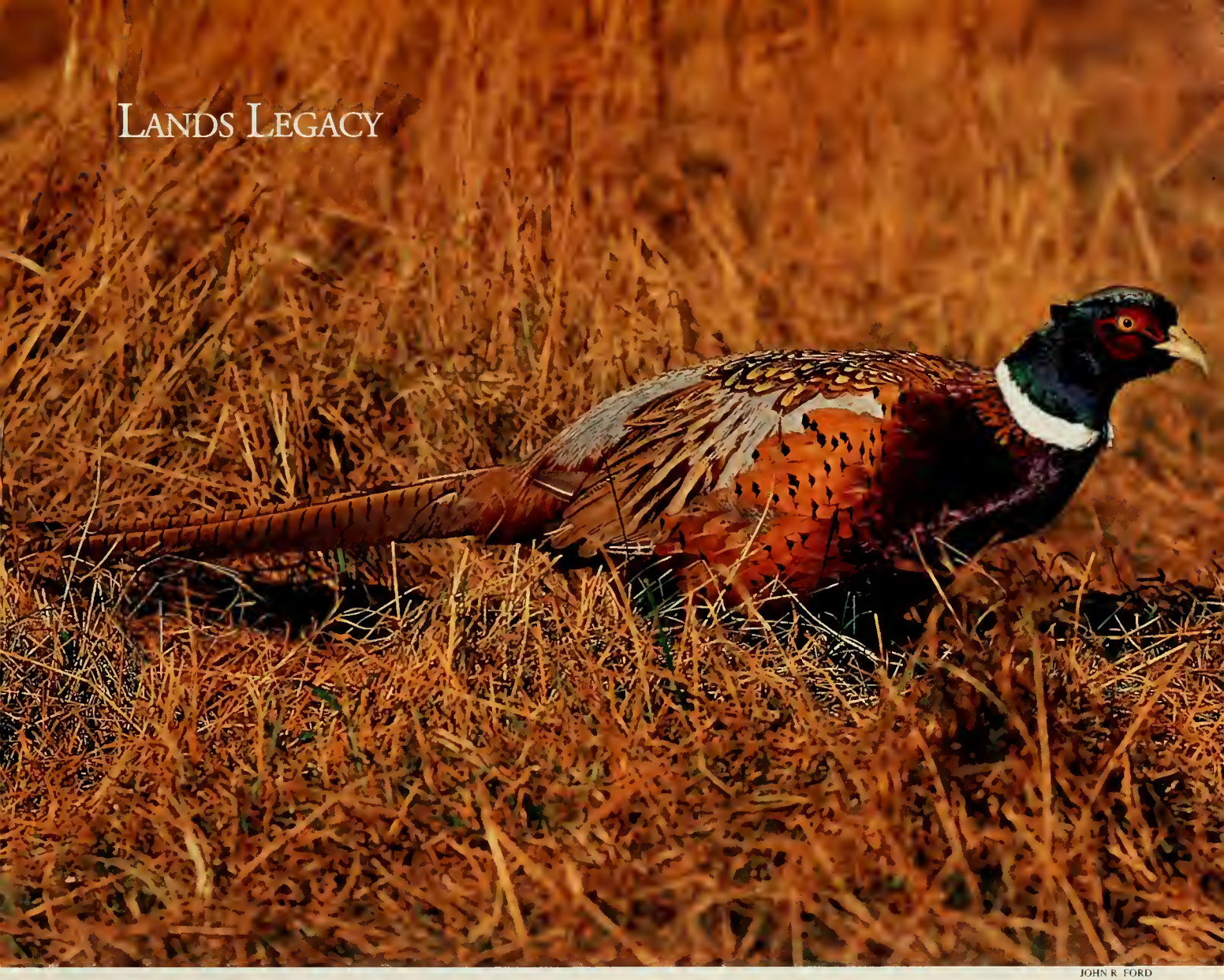
Third place—Cliff Rossberg

of New Brunswick.

Says Dowdy of his success in the 1995 Montana Waterfowl Stamp competition: "It's an honor, certainly, because of the opportunity it presents to have your artwork contribute to the conservation of a resource that is important to so many people. I personally love waterfowl, and I believe that preserving our wildlife through art and effective conservation and wildlife management is the greatest legacy we can leave our children for generations to come."

Beginning in 1986, hunters have been required to possess a state waterfowl stamp in addition to a federal "duck stamp" to hunt waterfowl in Montana. The 1985 Legislature established the stamp and authorized Montana Fish, Wildlife & Parks to sell the stamp and market related items. In 1993, stamps were sold to approximately 16,100 Montana waterfowl hunters and 5,500 stamp collectors throughout the country. Funds garnered from sale of the $5 stamps and related artwork are used solely to enhance and develop Montana wetlands and associated upland habitat for the long-term benefit of waterfowl.

Since the first state waterfowl stamp was sold in 1986, over $1.2 million has been spent on waterfowl habitat enhancement projects in Montana. ■



JOHN R. FORD

Pheasant Heaven

Ninepipe Wildlife Management Area

by JOHN FRALEY and JOHN GRANT

JUST EAST OF CHARLO in the morning shadow of the Mission Mountains, there's an oasis of bird habitat like no other in western Montana. Formed by glaciers that scoured the landscape some 12,000 years ago, enriched early this century by construction of the Flathead Irrigation Project, and modified by decades of agricultural activity, the wetland, grassland, and cropland habitats forming the Ninepipe Wildlife Management Area (WMA) are home to a great variety of wildlife species.

Because the WMA was purchased with sportsmen's dollars primarily as a place for hunting, managers have focused on improving habitats required by pheasants and waterfowl. The success of this management is reflected in the number of hunters returning year after year to pursue the area's abundant game birds.

According to pheasant hunters—a philosophical, dog-loving lot—Ninepipe WMA is nothing short of heaven. Jim Rogers, a long-time businessman from Missoula, came to love the area so much that when he retired, he packed up and moved there. "If there's a better place for pheasant hunting, I'd like to see it," says Rogers, who has hunted the WMA for 34 years. "Where else do you have this kind of scenery and these numbers of pheasants, geese, and ducks? When I walk along and look up at the mountains it doesn't matter if I see a bird or not."

The 1,142-acre WMA, comprised of blocks of land surrounding Ninepipe National Wildlife Refuge, may be the most heavily hunted property in Montana. It's not unusual to see 200 vehicles parked around the area on opening day of pheasant season. Even though hunting pressure is heavy all season long, bird numbers remain high. "The pheasants are here because the cover is here," says Rogers. "A lot of the cover on other lands has disappeared, but the habitat on the management area has gotten better and better. On the last day of hunting season, I put up over 200 birds in one field. In my opinion, Ninepipe has given hunters more bang for their buck than any other area in Montana."

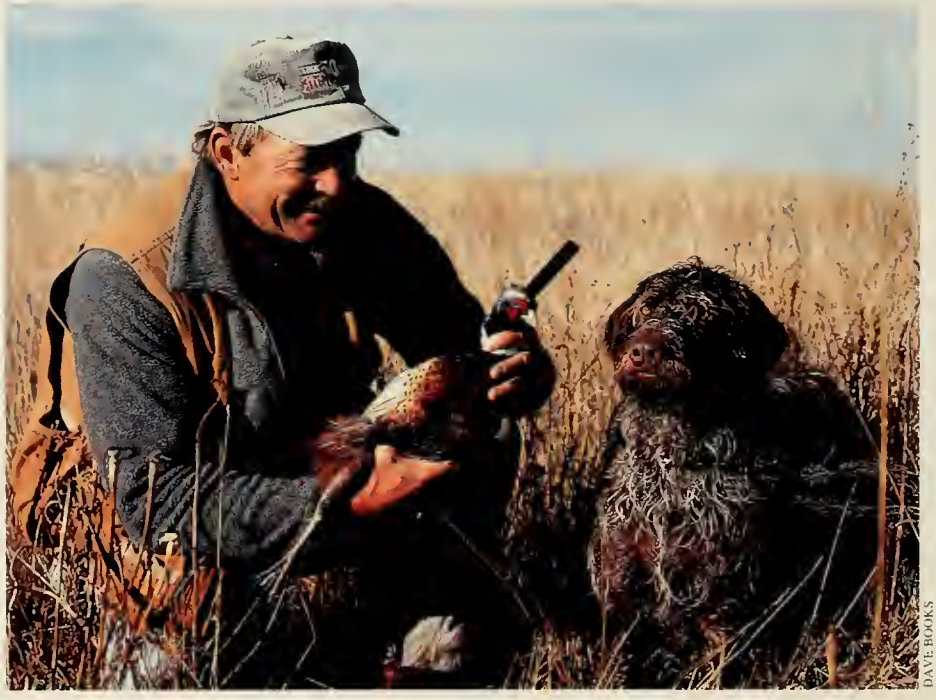
The WMA's proximity to the national wildlife refuge, which is closed to hunting, is also a boon to the pheasant population. The canny birds quickly learn that hunters can't pursue them there. Once hunting season is underway, many wise old roosters feed in the grain fields scattered throughout the WMA, but return to the secure habitat of the refuge when the pressure is on.

"I like to look out my window and watch folks hunt," says Dwight Stockstad, another adjacent landowner who has hunted the area for 43 years. "The pheasants will often be running for the refuge a quarter-mile ahead of the guns and dogs."

Stockstad, who managed the WMA from 1954 to 1963, had a hand in acquiring most of the property that it now encompasses. "Practically all the land bordering the refuge was owned by private hunting clubs or leased by a small group of hunters," he says. "Public hunting areas had to be provided if the average hunter was going to have a place to hunt, and habitat had to be protected if there was going to be any game."

Not everyone supported the land purchases at first. "Some hunters were against buying the land," he says. "They thought it wouldn't be worth the money and that the cost of their hunting licenses would go up to pay for it. Now, without the management area, I don't know where people would hunt. In a time when there are fewer and fewer places to hunt and fish, this place is a jewel."

Although pheasant hunting is now the major activity at Ninepipe WMA, waterfowl hunting predominated early on. Years ago, recalls Stockstad, hundreds of people would show up for the limited number of goose hunting pits provided there. To cope with the heavy demand, managers eventually adopted a lottery system so blinds could be allocated equitably. In the last two years, however, some pits have remained unoccupied on opening day. Stockstad theorizes that this may be partially due to hunters using grain fields on private land in other parts of the valley more than they used to, but it also reflects a general decline in waterfowl hunting across the state. Steel shot requirements, increased license costs, pesticide warnings in the 1980s, more complex regulations, societal changes, and low duck populations have all contributed to the waning interest.



DAVE BOOKS

Ninepipe WMA is one of the state's most popular—and productive—upland bird hunting areas. Due to good habitat management, pheasant numbers remain high despite heavy hunting pressure.

JOHN GRANT

GARY KRAMER

Dollars from the Montana Waterfowl Stamp program and Ducks Unlimited have financed 32 wetland improvements (left) at the WMA in the past two years alone. Wood ducks (left, below) and Canada geese (below) are just a few of the species benefiting from these projects.

DONALD M. JONES

"It's certainly not for a lack of geese," says Bill West, a U.S. Fish and Wildlife Service (USFWS) biologist stationed at the nearby National Bison Range. "Canada goose populations have been steadily increasing and are as high as they've been in the valley since records have been kept."

Duck populations, too, are thriving, after many years of decline. Last summer, biologists from FWP, USFWS, and the Confederated Salish and Kootenai Tribes banded ducks on the WMA and on nearby USFWS waterfowl production areas as part of a multi-state effort to identify migration patterns of western ducks. More ducks were banded in the Ninepipe area than on any equivalent area in Montana. "About 95% of them were young birds that probably hatched locally," says West. "We were done trapping by Labor Day, before southward migration generally begins."

Joe Ball of the Montana Cooperative Wildlife Research Unit began supervising graduate student research at Ninepipe in 1986. That year only 20% of duck nests on the study areas hatched successfully, compared with rates of about 50% for similar areas in the 1930s. His students also found far fewer nests than in earlier studies. "It was a worrisome situation," says Ball, "because nesting cover was in excellent condition."

Ball and his students learned that skunks and ravens, existing in unnaturally high numbers due to food and breeding sites provided by human settlement, were responsible for 90% of the nest losses. Because skunks were causing the biggest problem, they were trapped intensively between 1988 and 1993. Many artificial denning sites in irrigation culverts and old foundations were removed or obstructed in an attempt to keep skunk populations closer to natural levels. Duck nest success has since rebounded to nearly 50% and the number of nests has increased about 300%. "If skunk populations do return to their pre-trapping density, the higher number of nesting ducks may be able to sustain the nest predation that formerly caused problems," says Ball.

Intensive vegetation management initiated on the WMA about 12 years ago undoubtedly also helped boost

JOHN GRANT

Sharefarming agreements require that farmers leave a portion of their crops standing in the fields to provide food and cover for game birds.

duck populations. The local agricultural community had become outraged by a steady increase in noxious weeds on the WMA in the 1970s and early 1980s. To resolve the conflict, FWP adopted a more aggressive approach to managing weeds. Part of the solution involved sowing seed mixes of desirable, competitive grasses and legumes that grow into dense, durable stands providing cover for pheasants and many waterfowl species.

The WMA incorporates hay cutting in its management scheme as a way of keeping these fields in vigorous condition while at the same time benefiting local ranchers. To protect nests, time of cutting is delayed until after the peak nesting period. Although the hay crop is past its prime, most of the eggs are hatched. Late season regrowth is then left to provide fall, winter, and spring cover.

Another cooperative management practice that helps keep noxious weeds in check—sharefarming—has been a big plus for local landowners as well as hunters. Farmers grow barley and winter wheat on WMA lands and, as rental payment, leave FWP's share of the grain standing in the fields. The farmer is able to enhance his operation, FWP gets a lot of necessary work accomplished at someone else's expense, birds have an abundant and nutritious food source, and hunters are afforded a great opportunity to kick up a rooster or decoy some ducks or geese.

Water management, too, is a key component in maintaining Ninepipe's productivity. Irrigation rights on about a third of the WMA allow managers to supplement natural wetland recharge and regulate water levels in some of the area's approximately 800 natural glacial wetlands as well as in its man-made wetlands. Thus, regardless of local precipitation, resident and migratory wildlife species always find plenty of wetland habitat.

Restoration of wetlands drained while the land was in private ownership, creation of new wetlands, and enhancement of others continues to increase the productivity of the WMA. Dollars from the Montana Waterfowl Stamp program and from Ducks Unlimited have financed 32 wetland improvements in the past two years alone. Through contributions to these programs, hunters are helping offset the destruction of wetlands that has occurred nationwide and ensuring that waterfowl will always fill October skies over Ninepipe.

Hunters are not the only people benefiting from these wetland developments, however. Birdwatchers, photographers, anglers, artists, and others are rewarded by the wildlife and natural splendors that abound all year long. "Schools and colleges bring their kids here by the busload," says Jim Rogers, whose wrap-around picture windows look out on nearly every corner of the WMA. "There's geese, redheads, wood ducks, whatever waterfowl you want to name. There's loggerhead shrikes, kestrels, and shorebirds like avocets."

In 1994, some visitors were rewarded with a special—though unusual—viewing treat. Between spring and fall, five different grizzly bears were seen on the WMA at various times. A female and her three cubs were occasionally sighted from Highway 93, and a young male was seen in several places. Although the nearby Mission Mountains Tribal Wilderness and adjacent foothills and creek bottoms are well known for their grizzlies, the bruins rarely venture into the open valley bottom.

Winter, too, has great potential for wildlife viewing. The WMA and surrounding areas provide one of the best opportunities to view raptors in the Northwest. Five species of falcons can be seen at Ninepipe, plus a variety of hawks, eagles, and owls. "You can see birds here that are not usually seen in other parts of the state," says Denver Holt, founder of the Owl Research Institute in Missoula. "The diversity and productivity of the area, coupled with its location on a major migration route, is what makes it so incredible. In the Ninepipe area in 1990, we found the highest density of nesting short-eared owls ever recorded in the literature."

Vole populations are the principal factor determining raptor numbers. "When they're here, everything eats them," says Holt. Vole numbers fluctuate wildly; some years it's impossible to walk into a field without sending a dozen or more scurrying with nearly every step.

Voles impact the WMA in more ways than the number of raptors that winter there. They dig shallow burrows and devour grass, and at high densities turn productive fields into bare, loose soil, temporarily eliminating nesting

cover. "When they peaked in 1990," says Holt, "there may have been 1,000 or 1,200 per acre." They died off suddenly in February of 1991, and many hungry predators that had survived the winter on a diet of voles turned to the poorly concealed eggs of early-nesting ducks.

The tie between vegetation, voles, raptors, and ducks illustrates just one of the unique interactions that take place on Ninepipe WMA. The opportunities for scientific inquiry—or simply pondering the wonders of nature—are unlimited. For preserving this valuable resource, we have to thank those who recognized its potential and made the effort to purchase the land for all to enjoy. Most of the thanks, though, should go to hunters who have paid almost the entire cost of purchasing, improving, and maintaining the property that is now the Ninepipe Wildlife Management Area. ■

Ninepipe Wildlife Management Area

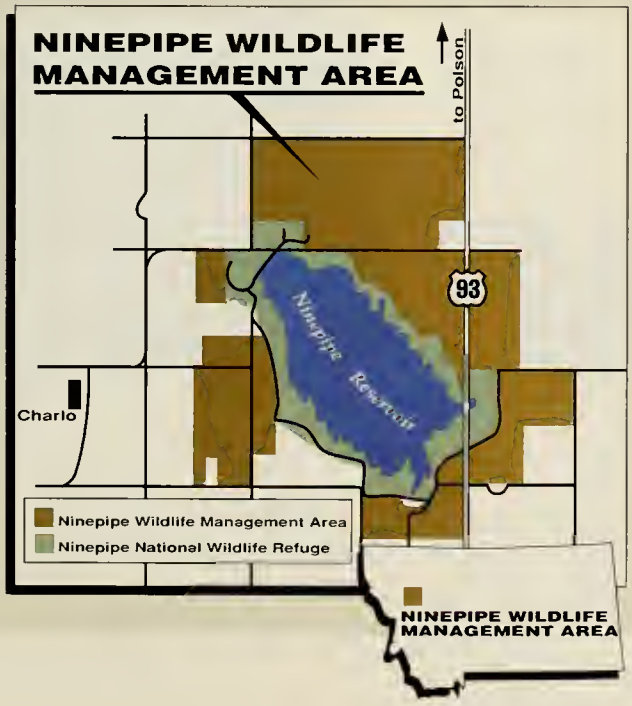
Location: In Lake County about 20 miles south of Polson and 50 miles north of Missoula. The area is FWP-owned, and lies within the exterior boundaries of the Flathead Indian Reservation.

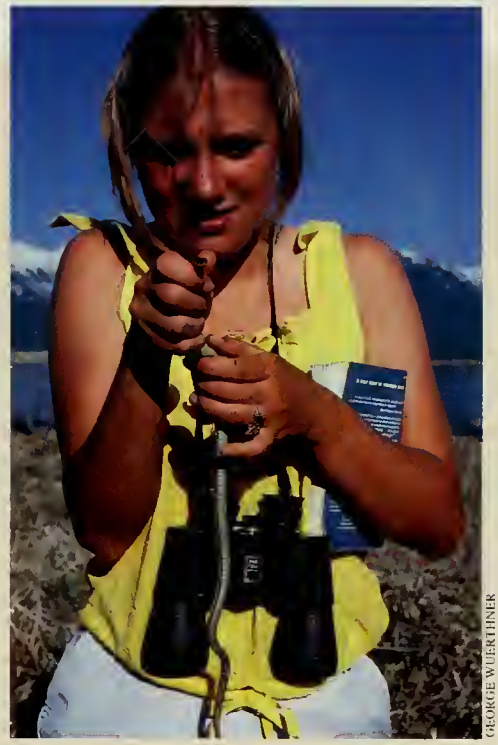
Size: 3,142 acres.

Acquisition Date: Parcels acquired between 1953 and 1962, in 1974, and in 1993 (28 transactions overall).

Access: The area lies on both sides of Highways 93 and 212, and is criss-crossed by several county roads. Signed parking areas are located along many of the roads.

Management Goal: To conserve and enhance upland and wetland habitats for a variety of wildlife species, and to provide quality upland bird and waterfowl hunting and wildlife viewing.





GEORGE WUERTHNER

The primary goal of Ninepipe WMA is to provide upland and wetland habitats for a variety of wildlife species as well as hunting and wildlife viewing opportunities.

Hunting Opportunities: Excellent pheasant and waterfowl hunting is available. A joint state/tribal license and a Flathead Reservation bird stamp are required of all hunters who are not members of the Confederated Salish and Kootenai Tribes. A federal migratory waterfowl stamp is required to hunt waterfowl. Regulations are formulated by the Flathead Reservation Fish and Wildlife Advisory Board and approved by the Tribal Council and Montana Fish, Wildlife & Parks Commission.

Wildlife Viewing: Opportunities abound for viewing songbirds, upland game birds, and waterfowl, especially in spring. Winter raptor viewing is nationally acclaimed. Numerous mammal and reptile species are commonly seen. A wildlife viewing and interpretive site with special features for people with disabilities has recently been added.

COUGAR

by JOHN MCCARTHY and JIM WILLIAMS

SNOWFLAKES DRIFT LAZILY down as we drive a familiar route in the Sun River Canyon near Augusta, eyes scanning the road for mountain lion tracks in the freshly fallen snow. To the west, the jagged reefs of the Rocky Mountain Front loom above us, shrouded this December morning in wispy clouds. Choteau-area houndsmen Rocky Heckman and Kelly Hirsch are in the truck behind us with their two anxious black-and-tans, Boone and Wino. Rounding a bend, we suddenly spot a lone set of tracks crossing the road. We stop the truck for a closer look, and Rocky and Kelly soon join us with the dogs. Inspection of the paw prints reveals them to be mountain lion, something the dogs have already ascertained. Burying their noses in the fresh tracks, they've commenced a mournful baying.

Chasing a cougar with hounds is an adrenaline-charged adventure, sometimes dangerous for dogs and always exhausting for hunters. But our goal this morning is not just to tree a lion—we are conducting a Montana Fish, Wildlife & Parks (FWP) study to learn more about these secretive animals, and we need to fit several cats with radio collars so their movements can be monitored. Through this study, we will glean useful information on lion behavior and expand our knowledge of how the big cats interact with prey species.

Hoping the dogs will corner the lion in a place where it can be safely tranquilized, fitted with a collar, and released, we follow the hound music as it recedes into the forest. After 20 minutes of clambering through dense timber and up and down rugged, rocky slopes, we descend into a drainage where the dogs have suddenly stopped baying. Rocky is the first to notice Boone standing in a clearing in the creek bottom. As we scurry down a snow-covered rockslide to the opening, we can see he is favoring a hind leg. The snow in the area is pocked with paw prints and mud. Just then, Wino trots over with what appear to be claw marks on his flank.

Obviously, the dogs have confronted the cougar, and it's had the best of them. As Kelly examines the dogs' injuries, which turn out to be minor, Rocky studies the tracks near the base of a large Douglas-fir tree. Suddenly he yells, "Cougar kittens, two of them!" Apparently the hounds had trailed the adult female to the tree, beneath which her two recently born kittens were hidden. After mounting an effective defense of her offspring, she left the area to draw the dogs away.

We quickly weigh and check the kittens to determine their sex and carefully return them to their hiding place. Then we relocate the lion's track leading down the gulch and release the dogs again. Before long they begin barking "treed," and we hurry toward them to head off further misadventures.

Soon we find ourselves peering up into the branches of a snow-dusted fir tree at an unhappy female mountain lion. We quickly dart her with a rapid-acting, non-narcotic tranquilizing drug.

JOHN FRALEY

JIM WILLIAMS

Houndsmen and capture specialists Kelly Hirsch (left) and Rocky Heckman prepare to release the hounds on a fresh mountain lion track in the Sun River Wildlife Management Area.

When administered correctly, this drug leaves the cat with sufficient muscle tone to retain its grip in the tree and still be mildly sedated. Once we are sure she is calm enough to handle, we climb up and lower her out of the tree with a rope to ensure her safety. The process of tranquilizing her, taking her measurements, fitting her with a radio collar, and waiting as she recovers from the drug takes about 45 minutes. Standing back, we watch as she ambles up the hillside toward her kittens.

MOUNTAIN LIONS EVOKE a wide range of emotions in those who enjoy Montana's wildlife and wild places. Some people revel in the knowledge that mountain lions still stalk our wild reaches, while others view them as a threat to livestock and human safety. For some, the opportunity to chase or harvest these seldom-seen big game animals is an unmatchable experience, while others object to the idea of killing them for any reason. In California, lion hunting has been banned since 1990, even though the state has a flourishing population of cougars and is beset by a rising number of lion incidents.

Regardless of the confusing welter of beliefs and emotions surrounding these big predators, one central, indisputable fact remains: Their populations in Montana are increasing, even as mortality through hunting and other causes has steadily increased. While all the reasons aren't completely understood, it is clear that wildlife management practices have positively affected mountain lions and their habitat in recent years.

Prior to 1971, when the Montana legislature classified the mountain lion a big game animal, its status was that of a predator. From 1879 through 1962,

ROCKY HECKMAN

Researcher Jim Williams (above) radio-collars a female mountain lion in the Bob Marshall Wilderness. Montana's lion hunting season is divided in half, with the first half a harvest season and the second half a "chase-only" season (opposite page).

the state paid a bounty on each lion killed. The bounty was lifted in 1962, but the cougar remained unprotected until 1971, when it was afforded game animal status. Today, a quota system is used to regulate numbers of males and females taken as well as to distribute harvest and hunting pressure across the state. This system of harvest regulation, which began in 1986, has offered much greater protection to the female segment of the lion population, resulting in a higher reproductive rate.

In addition to the protective hunting season structure, the prey base has also increased since the mid-1970s. Mild winters, game management strategies, and habitat protection have resulted in some of the highest ungulate numbers in Montana since before the turn of the century. Mild winters also have benefited the cats by reducing their metabolic demands during the colder months. The ability of lions to exploit a variety of habitats and use a diversity of food has contributed to their increased numbers as well.

Montana's mountain lion season runs from December 1 through April 30. Hunting with hounds has been found to be the only effective method of harvesting these secretive cats, and has the added benefit of allowing hunters to identify the sex of a treed lion and determine whether it is a lactating female traveling with kittens. The season is now divided in half, with the first half a harvest season and the second half a "chase-only" season. The chase season was instituted to allow houndsmen the opportunity to properly train their dogs.

In recent years, many of the wild places historically inhabited by mountain lions have attracted growing numbers of people. When people move into popular mountain regions like western Montana's Flathead Valley, they often choose to build on forested land. Such areas are home to many of the animals mountain lions prey on, especially white-tailed deer. While most new residents enjoy seeing a deer in their yard, they may not feel the same way about a mountain lion.

In Montana, as in several other western states, incidents involving lions and humans have become more common. In 1989, a 5-year-old child was killed by mountain lions as he played in the backyard of his rural home not far from Missoula, and in 1990 a cougar mauled a youngster in Glacier National Park. In northwestern Montana alone, 77 lion incidents were reported between 1990 and 1993. "At times, we get two or three phone calls a week relating to human-lion incidents,"

says Ed Kelly, FWP's warden captain in Region 1. "We take every lion incident phone call seriously and respond with information or a field investigation in all cases."

In both Regions 1 (Kalispell) and 2 (Missoula), the management strategy for reducing human-lion incidents is creation of intensive lion harvest zones around heavily populated areas. The need for such management zones points out both the threat to human safety that lions can pose and the threat that humans pose to mountain lion habitat security. By reducing the frequency of human-lion conflicts in and around urban areas, a balance can be struck that addresses safety considerations and retains healthy mountain lion populations in backcountry areas.

Although subdivisions and other developments continue to threaten mountain lion habitat throughout the West, the future of the big cats in Montana looks bright. Sound management, secure habitat, healthy prey populations, research efforts, and heightened public interest should guarantee future generations of Montanans ample opportunity to enjoy these secretive and mysterious predators. ■

MICHAEL H. FRANCIS

MICHAEL H. FRANCIS

The Sun River Mountain Lion Study

What did we learn from this project? Our study showed that movements of mountain lions along the Rocky Mountain Front reflect the seasonal migrations of major prey species. During summer and fall we found our radio-collared lions at higher elevations, on steeper slopes, and on a greater variety of exposures than in winter and spring—basically, they frequent the same habitats occupied by mule deer, white-tailed deer, bighorn sheep, and elk.

During winter and spring, we found lions at lower elevations, on more gradual slopes, and in heavily timbered areas, especially those with rocky northern and eastern exposures. These areas provide ideal hiding and stalking cover when ungulates are gathered in large wintering herds along the windswept foothills.

Although mountain lions are solitary hunters, mothers and their kittens travel together until the young cats are large enough to fend for themselves (males do not assist in raising the young). Like most large predators, lions teach their offspring how to locate and kill prey. On one occasion, we observed tracks in the snow indicating that a female had killed a mule deer doe while her two kittens waited downslope, facing uphill and presumably watching. At some point they joined her at the kill site and began feeding.

Cougars occasionally travel long distances, especially young adults dispersing to establish new territories. A male we marked as a kitten near Haystack Butte south of Augusta turned up as an adult near the Blackfeet Indian Reservation more than 90 miles north. Males have larger territories than females (in our study, about 53 square miles for males versus 25 square miles for females). We also found that lions living in the wilderness interior had slightly larger home ranges than those residing farther out on the Front.

Most females do not breed until they have established a home range, normally at 2 or more years of age. In northern latitudes breeding activity peaks in early winter, with kittens born in late winter or early spring. Litter sizes in our study ranged from one to three, although litters of four, five, and even six have been reported. The young lions leave their mother any time after one year, but most often at 15 months to 2 years of age. Siblings sometimes disperse as a group and may remain together three months or longer.

Mountain lions are efficient predators. At adult sizes ranging from 70 to 190 pounds (females are considerably smaller than males), they easily kill animals much larger than themselves. Although they sometimes leap from above onto

the back of the prey, their usual method is to stalk and ambush from ground level. The stalk concludes in a lightning-fast sprint and a leap to knock the victim off balance. The carcass of a bighorn ewe we examined showed claw marks on the hindquarters, presumably where the lion first hit her, but she died from powerful bites to the neck.

One male cougar we radio-collared, "Old Hoss," had only one eye, probably the result of a fight with another lion. This cat, whose home range in the Ford Creek-Fairview Plateau area was smaller than average, had a pronounced taste for bighorn sheep—in fact, all but one of the kills attributed to him were bighorns, two of them full-curl rams! His lack of stereoscopic vision probably contributed to his more confined hunting area and style. He knew how to kill bighorn sheep, so he never left sheep country.

One of the females we monitored had a less discriminating appetite. We learned through scat analysis that she had killed a house cat in the cabin areas of Sun River Canyon the night before we captured her. Where lions live in close proximity to humans, it is not uncommon for them to kill cats and dogs. They frequently supplement their diet with small mammals like marmots, hares, and porcupines (in fact, these animals are important food sources when ungulate populations are scattered or at low levels).

Despite their strength, mountain lions are sometimes driven from kills by wolves where ranges of the two species overlap. We documented a gray wolf chasing an adult lion off a freshly killed elk near the South Fork of the Sun River, and biologists working near the North Fork of the Flathead River have recorded wolves killing mountain lions as well as driving them from prey.

ALAN & SANDY CAREY

Perhaps to conceal their kills from scavengers like coyotes, hawks, eagles, and magpies, lions often drag their prey into patches of brush or timber. We commonly observed drag trails of 50 yards or more, sometimes up steep hillsides. Lions cover the partially eaten prey with grass, pine needles, or snow, again for concealment or to reduce spoilage. They typically rest a short distance away from the carcass, returning to it at intervals over a period of several days.

The frequency at which lions must kill prey depends on several factors, including size of prey, time of year, and the lion's age, size, and sex. A female with kittens will kill more frequently than a lone female, especially during summer when the meat may spoil. There is evidence that lions will scavenge at times, but for the most part they prefer fresh meat and will leave a kill when it begins to spoil. Because cold weather requires higher energy expenditures, kills may be made more frequently in winter. In Montana, lions kill a large prey animal every two to three weeks in summer and every week to 10 days in winter.

Cougars hunt and travel primarily at night, frequently crossing streams and even rivers. Although they travel in all weather conditions, they often take shelter under a tree or rocky ledge during a heavy rain or blizzard. Along the Rocky Mountain Front, they sometimes make use of limestone caves. One cave we searched was littered with bones and carcasses, including those of mule deer, bighorn sheep, and marmots. We also found the skull of a mountain lion kitten there.

In mountain lion populations, as in all wildlife populations, young animals sustain the highest mortality. Young adults are especially vulnerable when they leave their mother to establish new territories. Some starve due to inability to obtain food on their own, and others are killed by adults with established territories. There are reports in the literature of males killing kittens, males killing females, females killing males, and females killing other females. Not surprisingly, lions occasionally succumb to injuries received while attempting to kill their prey. Once established on home ranges, lions become relatively secure, occasionally surviving 12 or 13 years in the wild.

Department to Prepare EIS on Mountain Lions

FWP is currently preparing an environmental impact statement (EIS) that will result in adoption of a statewide management plan for mountain lions. Public comments to determine the issues to be addressed have been compiled and a draft EIS has been circulated.

The document will include: (1) a review of scientific studies of lions; (2) a series of management actions the department is proposing; and (3) a list of alternative methods of implementing these management actions.

Following review of the comments received on the draft EIS, a final document will be prepared. This is slated to be completed and submitted to FWP Director Patrick Graham in fall of 1995. He will then decide, based on analysis of the EIS, the direction FWP will take in future management of Montana's mountain lions.

If you are interested in receiving a copy of the draft EIS, or would like to comment on mountain lion management in Montana, write:

Wildlife Division; Montana Fish, Wildlife & Parks; P.O. Box 200701; Helena, MT 59620-701.

MONTANA WILD LIFE

The Official Publication of The State Fish and Game Commission

VOL. I JUNE 1928 NO. 1

Montana Fights to Save Wild Life

By THOMAS N. MARLOWE

Chairman Montana State Fish and Game Commission

Editor's Note: This article from the inaugural issue of Montana Wild Life, *published in 1928, says much about the hopes and aspirations of our early day commissioners, as well as the challenges they faced—challenges not so different from those of today. The article, and those on the following page, are offered as the Montana Fish, Wildlife & Parks Commission celebrates its 100th anniversary (see p. 31). We hope you enjoy a look at the past through the eyes of Montanans who championed the cause of wildlife conservation so many years ago.*

POPULARITY of hunting and fishing was never greater than at the present time. Thousands of people in all walks of life are today accepting the invitation offered for hunting and fishing in Montana's great forest and valleys, our crystal lakes and sparkling streams and are realizing as never before that our heritage of fish and game is probably the greatest natural resource and asset we still retain. Every sign points to the fact that the peak in popularity has not yet been reached. This being true, the work of producing more fish and game must keep pace with the tremendous and ever-increasing demand being made upon the present supply.

The task of supplying fish and game for Montana sportsmen and our neighbors is by no means easy. Each year it is becoming more and more difficult. With the steady advance and demands of civilization the feeding and breeding grounds of wild life have been greatly restricted.

In the past, much fish and game, the increase of which would greatly add to our present day supply, has been taken not so much because it was needed, but seemingly for an ever-present desire on the part of some to kill and destroy, and each year sees our present-day sportsmen growing more proficient in the taking of fish and game with tempting lures and tackles, high powered rifles, and shotguns of pump and automatic construction.

T N Marlowe

Not only this, but the automobile is an agency of wild life destruction almost as deadly as the gun of the hunter or the tackle of the fisherman. It enables the hunter or fisherman to put in more hours fishing or hunting and still get back home as early as heretofore. It has brought practically every fishing water and hunting ground to the very back door of the fisherman and hunter. It enables him to reach within a few hours places heretofore inaccessible. These places which heretofore could not be reached by the usual mode of travel for a day of hunting or fishing formerly acted as hunting and fishing preserves or sanctuaries, so to speak, and the outflow of fish and game kept the accessible hunting and fishing ground stocked. But with the automobile we have no inaccessible places. The inaccessible hunting and fishing grounds of yesterday have become the hunting and fishing places of today and we have no overflow of fish and game from any source.

Another one of the greatest dangers threatening our future supply of fish and game has been and is the mental attitude of sportsmen themselves. With an indifference that at times has been simply unbelievable, many of us have winked at fish and game violations and seem utterly unable to see the handwriting on the wall if conditions continue as they have existed. Continued violations of our fish and game laws can ultimately mean but one thing: No fish and game for any of us, for neither the fish nor the game can withstand the results of legitimate hunting and fishing and that which is illegitimate as well.

Until a few years ago much of our fish and game legislation was enacted almost entirely with the idea of protecting our former abundance of fish and game. However, with the opportunities for propagating fish and game, at least by natural means, becoming more and more restricted, the methods of taking wild life more deadly and effective, and the number of those who hunt and fish daily increasing, it becomes very necessary that the work of propagating more fish and game should receive increased attention.

A definite program of propagation as well as one of conservation and protection is necessary. Montana's Fish and Game Commission adopted such a program several years ago and it is with the idea of acquainting sportsmen of the state and nation with the activities of the department that the Commission has decided to publish and circulate *Montana Wild Life*. This publication will be the official publication of the Commission and through its columns we expect to give to sportsmen of this state authoritative information as to what our program is and what is being done by the department to make hunting and fishing conditions better in this state.

We hope in this way to keep the sportsmen of the state in closer touch with the department, and to keep them advised as to what is being done and why it is being done....we sincerely hope that *Montana Wild Life* will meet with favor from sportsmen of the state and will soon take an enviable place among publications of the nation as an agency for wild life propagation and conservation.

PERSPECTIVES

MONTANA WILD LIFE

The Official Publication of The State Fish and Game Commission

SPORTSMEN PLANT 10,000 BIRDS

VOL. 1, NO. 8 — JANUARY 1929

MONTANA'S Fish and Game Commission has purchased and released nearly 10,000 game birds during the last several years, to restock fields and valleys, maintain wild life and introduce approved varieties for the benefit of stockman, farmer and sportsman.

Figures have been compiled under direction of Robert H. Hill, state game warden, covering the purchase of Chinese pheasants, Hungarian partridges and quail for the last 10 years. Since 1918 the department has distributed 2,973 Chinese pheasants throughout the state and the colorful Mongolians have multiplied rapidly and become well acclimated. A three-day open season on male Mongolians was declared in November by the Commission and sportsmen generally voted him a rare game bird.

The figures show that since 1922 the department has purchased from game farms in Czecho-Slovakia, Hungary and other European countries, a total of 6,600 Hungarian partridges—the gamiest little game bird of them all. The Huns have likewise multiplied rapidly and are the friends of farmers and gardeners because of their activities among insect pest. The Hun lays hard for a dog, always flushes where the hunter thinks he ain't and is one of the foxiest of feathered friends of the fields.

One consignment of 360 Gambel valley quail was introduced in the Bitter Root and Flathead. Hundreds of quail were planted by Marcus Daly on his farm in the Bitter Root. The Chinese pheasants were purchased from Oregon game farms.

The purchase of Chinese pheasants by the Commission were as follows: In 1918 the first shipment of 48 was introduced; in 1920 there were 300 released; in 1921 the total reached 500; in 1922 the mark was increased to 1,500; in the same year another shipment of 600 was liberated and the last consignment of 24 was distributed in 1924.

Liberation of Hungarian partridges shows the following figures: The first shipment of 1,000 was released in 1922; the next batch included 2,000 which were freed in 1923; another 2,000 came in 1925; then 1,000 more were released in 1926, and a shipment of 600 was freed. Other small shipments have followed.

THE HUNGARIAN
Feathered Fox of the Fields

Montana's Big Game Kill in 1931

By Floyd L. Smith

VOL. IV, NO. 9 — FEBRUARY 1932

WHEN Montana sportsmen carefully study the compilation of figures denoting the kill of deer and elk within the state during the season just closed, they will find statistical evidence that is startling. For the first time in the history of the State Fish and Game Department, this tabulation has been made possible through act of the last legislature. The law requires that tags be affixed to deer and elk and that the report card attached to each big game license be returned to the department by January 1, 1932, whether any big game has been killed or not. More than 10,000 are dilatory. In failing to mail the cards they have made themselves liable to prosecution. Thus far the tabulation has passed 17,000 cards and they are still rolling in, hence the figures presented in this edition are incomplete for the season.

Lincoln county, in the extreme northwestern part of the state, leads the deer kill with 1,294 bucks and 652 females. This totals 1,946 deer taken from this one county in a single season, and the reports are still coming. Lincoln is one of six Montana counties where deer of either sex may be taken. In Flathead county the kill of does exceeds that of bucks, according to incomplete figures. Thus far there have been 617 bucks and 684 does reported killed there. In Lewis and Clark county, where the buck law prevails, 488 antlered monarchs have already been reported bagged. At the close of the season veteran sportsmen would have wagered that the total count of deer in the state would not reach the total number already reported killed.

Report cards already tabulated show 6,438 bucks and 2,211 does taken or a total of 8,649. The elk kill is likewise amazing with a total of 905 bulls and 757 cows or 1,662 for the season with more to come. Study of the table published in this edition of *Montana Wild Life* reveals ever-increasing interest. The statistics will prove of valued guidance for the department as well as other agencies interested in the preservation and conservation of game resources.

Vigilantes of Montana

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THE OLD WEST

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FWP COMMISSION CELEBRATES CENTENNIAL ANNIVERSARY

Little could the first Montana Board of Game and Fish Commissioners have envisioned in 1895 the bountiful fish and wildlife resources Montanans would enjoy today. Vast herds of buffalo had been all but eradicated from the plains, the passenger pigeon had become extinct, and market hunters were still decimating populations of game animals for shipment throughout the world.

With the Montana Fish, Wildlife & Parks Commission celebrating its first 100 years of existence this year, it seems fitting to look back and consider the foresight of the 1895 Montana Legislature, whose members recognized the need for protecting our valuable wildlife resources and established the original commission for that purpose.

According to records maintained by the Montana Historical Society (as detailed in a 1987 Montana State University thesis entitled "The Genesis of Wildlife Conservation in Montana" by Joan Louise Brownell), several laws had been enacted to protect fish and wildlife prior to the Commission's birth.

In 1865 the first territorial legislature passed a bill prohibiting the baiting of a hook with any drug or poisonous substance and outlawing the use of seines or nets to take trout. The law provided that a rod or pole with a line and hook were the only legal means of taking trout from streams within the territory. In 1869, a closed season was placed on partridge and quail for three years, and grouse, prairie chickens, pheasants, and fool hens were protected from March 1 through August 15 each year. Over the next 20 years, the legislature passed laws closing the season for part of the year on big game, furbearers, and waterfowl; prohibiting the market sale of big game animals and birds; and preventing the killing of game animals for their hides alone.

But what was missing was an effective way to enforce these laws. As Louise Brownell noted, the immense size of the Montana Territory made enforcement of early wildlife laws very difficult, and, in fact, the legislature appeared quite unconcerned with enforcing them. While the legislature "...continued to strengthen the protective laws and increase penalties, all bills attempting to provide for game wardens failed."

Beginning in 1889, several attempts to establish game warden positions across Montana—a step that had already been taken by several states farther east—met with little success. Although the 1889 Legislature passed a law giving counties the ability to hire wardens on a petition of county residents, lack of funds for salaries and lack of commitment by county commissioners effectively made the provision a failure.

It wasn't until the Montana Legislature convened in 1895 that formalized wildlife protection efforts by the state took hold. Echoing the call of Governor John E. Rickards' message to the session, in which he called for "mandatory" appointment of game wardens to enforce the state's laws, legislators introduced and considered 11 bills relating to protection of fish and wildlife. Three of the bills became law, the most important being establishment of a Board of Game and Fish Commissioners. Introduced in the Senate by Rep. Edward P. Chandler of Fergus County, the bill was subsequently revised by both the House and Senate Game and Fish Committees, passed by the full House and Senate, and signed into law by Governor Rickards on

COURTESY OF THE MONTANA HISTORICAL SOCIETY, HELENA

When it established the first Montana Board of Game and Fish Commissioners in 1895, the Montana Legislature directed the board to appoint a Montana resident as State Game Warden "to examine into and enquire as to any infractions and violations of the game and fish laws of the State of Montana." Seated in the Game and Fish office in Helena in 1910 are (left to right) Hazel Cole, State Game Warden Henry Avare, and Alta McMahon.

March 14, 1895.

The board was to be composed of three members appointed by the governor to serve without compensation for one-year, two-year, and three-year terms, with new commissioners appointed as the original seats became vacant at three-year intervals. The law also stipulated that it would be the duty of the board "to secure...the enforcement of all the laws of this state for the preservation, propagation and protection of the game and fish of the state." To carry out this mandate, the board was directed to appoint a Montana resident as State Game Warden to serve as secretary and business agent for the board, and "to examine into and enquire as to any infractions and violations of the game and fish laws of the State of Montana, and to institute prosecutions for such infractions and violations, in the proper courts."

Gov. Rickards appointed W. B. Green of Flathead County, John F. Cowan of Silver Bow County, and John O'Connor of Lewis and Clark County as the state's first Board of Game and Fish Commissioners. Although it took them three years to do so, they eventually appointed R. A. Wagner as Montana's first State Game Warden.

Montana's legislators in years soon after would disagree about who should appoint the State Game Warden—the board or the governor—and about how many commissioners should be on the board. In fact, the 1901 Legislature gave the authority to appoint the warden to the governor, and the 1921 Legislature set the number of commissioners at five, its present level.

But the stage had been set for more progressive conservation measures that would eventually establish Montana as a leader in restoration of fish and wildlife populations across North America. Those nineteenth-century legislators and commissioners could only have dreamt of the role Montana would one day play in the emergence of the American wildlife conservation movement, and of the wonderful wildlife legacy that would grow from their foresight.—*William Phippen, information officer, Conservation Education Division, Helena*

FWP Sponsors "Becoming an Outdoors-Woman" Workshop

Fishing, canoeing, identifying wildflowers, sleeping in rustic cabins—sounds like summer camp for the kids, but it's not. This camp is for ladies interested in trying outdoor activities.

Montana's first "Becoming an Outdoors-Woman" workshop, sponsored by Montana Fish, Wildlife & Parks (FWP) and the University of Wisconsin-Stevens Point, was held last summer at the Birch Creek Outdoor Education Center in the Pioneer Mountains near Dillon, Montana.

LIZ LODMAN

Participants in last summer's "Becoming an Outdoors-Woman" workshop received instruction in wingshooting (above) and numerous other outdoor skills.

Choosing from a variety of sessions that included orienteering, archery, flyfishing, riflery, stream ecology, and nature photography, participants learned new outdoor skills or improved on existing skills. Instructors started each course with the basics, provided hands-on experience, and encouraged students to ask questions and interact with each other.

Ranging in age from college students to grandmothers, the campers were as varied as the activities they participated in—their occupations included doctor, secretary, engineer, teacher, and full-time mother. Approximately half were Montana residents, while the rest came from places as far away as Florida and Vermont—18 states in all.

For one young newlywed, the workshop was a gift from her husband, an avid outdoorsman who wanted her to learn about and appreciate the activities he enjoyed.

When asked why she registered for the flyfishing course, one woman replied, "I go flyfishing with my husband and he just doesn't know how to explain things to me." Another responded, "I want to catch more fish than my husband."

Evenings brought the campers together to dine on food prepared in the Dutch oven cooking class. The first night, FWP's Vince Yannone entertained everyone with his vast knowledge of wildlife and the outdoors. The following evening offered an outdoor clothing fashion show with instructors and participants modeling clothing provided by Gander Mountain.

Women have often been overlooked as outdoor recreationists, but that notion is quickly changing. FWP plans to hold another Becoming an Outdoors-Woman workshop in summer of 1995. For more information, contact: Conservation Education Division, Montana Fish, Wildlife & Parks, P.O. Box 200701, Helena MT 59620.—*Liz Lodman, program officer, Conservation Education Division, Helena*

DALE BURK, THE HUNTER'S ALLIANCE

Five Montanans were inducted into the Montana Hunting Hall of Fame last October as part of the Montana Statewide Hunting Heritage Awards Banquet held in Missoula. They are (from left): Mavis Lorenz of Missoula, Hunter of the Year Award; Teage Kinzell of Glasgow, Young Hunter of the Year Award; Chris D. Tweeten of Helena, Conservationist of the Year Award; and Nels Thoreson of Great Falls/Missoula and Jack Atcheson, Sr. of Butte, both Lifetime Achievement Award inductees. Each was presented a plaque commemorating his or her induction into the Montana Hunting Hall of Fame and their names will be added to a plaque that hangs permanently in the Commission Room of the Montana Fish, Wildlife & Parks headquarters in Helena. This marked the first year the awards banquet was held away from Helena, with the Ravalli County Fish & Wildlife Association, the Western Montana Fish & Game Association, and The Hunter's Alliance as lead co-sponsors. In 1995 the banquet will be in Billings under the lead sponsorship of the Billings Rod & Gun Club.

Video Magazine Available

The Winter 1994-1995 *Montana Outdoors Video Magazine* is available free of charge from the Montana Fish, Wildlife & Parks video office in Helena. This edition features the final recommendations of the Private Lands/Public Wildlife Advisory Council, a segment on managing Yellowstone bison, an update on the Habitat Montana program, and a question-and-answer session with Director Pat Graham concerning whirling disease in Madison River rainbow trout, game farming, and the department's environmental impact statement on mountain lion management. To receive the video magazine, call or write: Video Production Unit; Montana Fish, Wildlife & Parks; 930 W. Custer Ave.; Helena, MT 59620; (406) 444-2733.

The spring 1995 version of the *Montana Outdoors Video Magazine* will be available in May.

Memorial Funds Honor Conservationist Phil Tawney

In honor of Phil Tawney's powerful commitment to Montana's great places, the Rocky Mountain Elk Foundation (RMEF) and the Cinnabar Foundation have each established memorial funds in his name. A lifelong conservationist, Tawney died January 9 of complications from leukemia.

With an initial $100,000 donation from Len and Sandy Sargent—Yellowstone-area ranchers and conservationists—the RMEF created the Phil Tawney Memorial Elk Habitat Fund. This fund will be used specifically to purchase and protect critical elk range in Montana.

A second special fund in Tawney's honor will be established within Cinnabar, to be used for broader conservation programs. The Cinnabar Foundation is a nonprofit conservation organization dedicated to grass-roots conservation work in Montana and the Greater Yellowstone Ecosystem. Since its inception in 1983, Tawney served on Cinnabar's board of directors.

Besides serving on the boards of a number of conservation groups, Tawney, together with his wife, Robin, also founded the Montana Environmental Information Center, to give citizens a voice in setting policies beneficial to all Montanans.

In 1984, Tawney was one of the first to offer his assistance to the Rocky Mountain Elk Foundation. To help get the organization off the ground, Tawney volunteered his land conservation experience and his legal skills. Over the years, his deep dedication to wildlife continued through his pivotal involvement with the RMEF. Thanks in large part to Tawney's efforts, grand sweeps of habitat like southwestern Montana's Robb Creek, the Northern Yellowstone Elk Herd Project and Utah's Book Cliffs Conservation Initiative remain wild places.

To make contributions to either of the Tawney funds, you may contact the RMEF at 1-800-225-5355, or P.O. Box 8249, Missoula, MT 59807-8249, or the Cinnabar Foundation at P.O. Box 5088, Helena, MT 59604.

The Rocky Mountain Elk Foundation is an international, nonprofit conservation organization dedicated to ensuring the future of elk, other wildlife and their habitat. Founded in 1984, the RMEF now has 86,000 members who have helped raise more than $34 million to conserve and enhance 1.7 million acres of wildlife habitat.—*Rocky Mountain Elk Foundation*

SECOND-CHANCE BEARS

by Vince Yannone
Assistant Administrator
Conservation Education Division

While we are bundling up and shivering in the cold, bears in Montana are toasty warm in their dens, sleeping away the winter. Stimulated by cold temperatures, snow, and lack of food, wild, free-roaming bears go into hibernation between mid-October and mid-November. They stay in their dens until April or May, when warming temperatures signal the arrival of spring.

Normally, young black bears stay with their mother and hibernate with her for one or two years, sometimes even three. The longer they stay, the greater their chance of survival when they are finally on their own. If their mother has taught them properly, they will then know how to secure enough food to survive and put on plenty of fat prior to hibernation. She should also have taught them how to dig a den in a proper location.

But what happens if a sow is killed or separated from her young during those first crucial years? Chances are, the cubs won't survive on their own. That's where FWP's Wild Animal Shelter in Helena sometimes can help. Each year, the shelter receives five to ten bear cubs in spring or fall, often just after they have lost their mother. In recent years, Steve McMorran, Marilyn Hayes, and I have developed a unique method of raising these cubs, "teaching" them to hibernate, and returning them to the wild.

Here's how it works. If a bear cub arrives at the shelter in the spring, we have the entire summer and fall to fatten it up. It receives as much food and milk as it wants. Fruits and vegetables, donated to the shelter by grocery stores in the Helena area, are its staple diet. The bear puts on weight through the summer months, and by fall it weighs two to three times as much as a free-roaming bear its same age. We've recorded weights of 85 to 125 pounds for these cubs at denning time the first year, while their wild counterparts might weigh only 45 to 50 pounds.

TOM PALMER

Personnel at FWP's Wild Animal Shelter in Helena have developed a unique method of raising orphaned bear cubs and returning them to the wild. Above, Steve McMorran (left) and Vince Yannone (right) prepare a tranquilized black bear for placement in its man-made den.

Bears coming to the Wild Animal Shelter in the fall do not have time to put on ample body weight for release. These bears are held until the next spring or the following year's denning time.

Wild bears emerging from their dens in spring depend primarily on grasses to survive. Because of the low protein value of grass, the bears continue to lose weight for a time. They depend on their fat reserves to carry them through until more nutritious food can be found. Bears raised at the shelter, while they may lack foraging skills at first, are carrying lots of extra weight and thus have a survival advantage during the first critical weeks after hibernation.

But wait, how did the bears from the shelter get into the den? During summer, we go into the mountains to dig dens in which to place our bears. The dens are located on public lands as far away from people as possible. These sites are clearly marked so we can find them easily when heavy winter snows arrive in the mountains.

In fall, the bears are initially denned at the Wild Animal Shelter in specially constructed wooden boxes. Students from C. R. Anderson Middle School's At Risk Program, under the direction of teacher Henry Begler, help construct the boxes. The bears are first introduced to these boxes during summer to familiarize them with the structures. The bears use the boxes to sleep in or

rest on top of on warm summer days.

As temperatures begin to drop in fall, hay is placed in the boxes. At first, the bears often pull the hay from the boxes, but they eventually learn to bed on it. As winter temperatures get colder, more hay is offered. Eventually, all food is withdrawn, and 10 to 14 days later the bears go into their hibernation state. By the time our bears finally stay in their denning boxes, it's usually mid-November to mid-December, about a month later than bears in the wild go into hibernation.

In mid-January, we wake the bears, transfer them to carrying cages, load them into trucks, and drive as close to the pre-dug denning sites as possible. Here the bears are tranquilized, tattooed, ear tagged, and radio collared (the latter allows us to keep track of the bears after they leave the winter den). The bears are then wrapped in blankets, placed on sleds, and taken by snowmobile to the dens while they are still under the influence of the drug.

Prior to putting the bear in its pre-dug den, we line the floor with hay from the bear's denning box at the shelter. We feel the familiar smell of the denning materials will help encourage the bear to stay in its new den. Once the bear is settled in, the den entrance is covered with pine boughs and snow.

The bears stay in the constructed dens until early spring and emerge about the same time as free-roaming bears. Now they must find food on their own. Like their wild counterparts, they immediately begin to look for green plants on south-facing slopes (these plants were introduced at the shelter along with other foods).

To date we have released 50 bears to the wild. Only two have come back to cause trouble. One followed a creek drainage down from public land into a highly developed area. He utilized food put out on back porches for domestic cats and dogs. He didn't cause any trouble to people but repeatedly visited subdivisions and finally had to be euthanized. The other bear frequented a mining site where trash had been thrown and also had to be euthanized.

Presently we have five biologists helping return these bears to the wild. All the bears have been placed on public lands at considerable distances from human habitations. We plan to continue monitoring these bears to assess their health and behavior. So far, our denning program has given numerous bears a second chance to go back to their wild homes, and most of them are making it.

STEVE MCMORRAN

To encourage bears to stay in the pre-dug dens, hay from their denning boxes at the shelter in Helena is scattered on the floor. Once bears are settled in, den entrances are covered with pine boughs and snow.

Bear Denning Facts

- Bears favor north-facing slopes for denning because of the colder temperatures and deeper snow these sites provide.
- Black bears use natural cavities while grizzly bears usually excavate their dens. A natural cavity may be a hollow log, a hollowed-out area under a large rock, or a cave formed by two large rocks.
- Grizzly bears usually choose a den site just below a large tree on a steep slope. No one knows exactly why grizzlies excavate their dens below large trees, but possibly the roots help support the roof of the den chamber.
- Dens of both grizzly and black bears vary in size, depending on the age and sex of the bears using them. Adult males or females have larger dens than subadults (bears under 5 years of age), and sows with cubs have larger dens than bears denning alone. Adult males (boars) never den with adult females or young.
- Some bear dens are lined with conifer boughs, while others are unlined. Similarly, dens may or may not have air vents (heavy snows may block all openings). In any case, an air vent to the den chamber is not necessary to ensure ample oxygen to a hibernating bear.
- Bears in hibernation lower their body temperature from a normal 101 °F to 85-86 °F. They only breathe two to three times a minute. They are not true hibernators like marmots and ground squirrels, whose body temperature drops to about 40 °F and whose breathing frequency is less than that of a bear.
- Bears in hibernation do not eat or drink. They live off the body fat accumulated when food was plentiful.
- Sows and cubs hibernate first, followed by boars. In spring boars are out first, followed by sows and cubs. Time of emergence depends on snow depth and weather conditions—in most years, it's mid-April to mid-May.
- Breeding takes place in June or July, and young are born in the den the following January or February. The cubs normally stay with their mother for two years. She pushes them off in June or July during breeding season, and from then on they're on their own.

Letters Policy: We welcome letters on any subject appearing in the pages of Montana Outdoors*—while we may not be able to publish all letters due to space considerations, we try to publish a representative sample. We do not publish unsigned letters or those signed with fictitious names. We reserve the right to edit letters for length and clarity.—Ed.*

PHOTO ISSUE: FOOD FOR THOUGHT

I've always looked forward to your annual photo issue. However, it is increasingly evident even to an amateur photographer like myself that many of your prize photos are not taken of animals actually in the wild but "rental" or game farm subjects.

If you accept these photos they should specify where they are taken—especially since you now are paying for accepted photos. *Montana Magazine* usually says where each of their photos are taken. I have never submitted photos to you but do personally know professional and amateur photographers who work extremely hard to get authentic pictures of *wild* animals or I should say, animals in the wild. I live in an area where wild animals always are nearby and I know it's difficult to photograph them.

Please in the future insist on photographers identifying photos that are taken of captive or game farm animals—but I'd rather you not accept these at all and certainly not pay for them.—*Phyllis L. Wolfe, Silver Gate*

Our policy has always been to choose pictures for the Special Photo Issue solely on the basis of artistic merit and natural appearance. With the exception of scenics, we've never insisted that photographers tell us exactly where their photos were taken. While the question of "authenticity" in wildlife photography is not new, we have heard it voiced more frequently of late. Some photographers tell us they prefer to work in completely natural settings, while others see nothing wrong with photographing animals in captivity provided the backgrounds are natural. The latter cite ease of getting good photos of hard-to-photograph subjects and less stress to the animals themselves. To some degree, "wildness" is in the eye of the beholder. Many animals in national parks are habituated to humans, yet nearly all photographers consider them fair game. Then there are songbirds lured into camera range at backyard feeders, wild waterfowl free to come and go at city parks and nature preserves, reptiles at places like the Sonoran Desert Museum—even the ubiquitous campground chipmunk. Are they wild or are they not, and should it concern us as we select our photos? Readers?—Ed.

DAVE BROOKS

It's wildlife, but is it wild?

The January/February 1995 Special Photo Issue of *Montana Outdoors* has circulated around the Elk Foundation and the staff can't stop commenting on how this issue truly captured the spirit of Montana. The poetry of Mike Logan combined with the captivating images of Montana and its wildlife reminds those of us here at the Elk Foundation what Montana is about and why we choose to live here.

Thank you for an outstanding job. This is an issue to treasure now and in generations to come.—*Amy L. Crookshanks, Rocky Mountain Elk Foundation, Missoula*

FISH IN A BARREL?

I was enjoying Eileen Clarke's article, "Why We Hunt," in the September/October issue until she assumed the role of the insenstive, macho butcher, even seeming to outdo her male companions in that regard.

I am of course referring to the sick spectacle of someone shooting the heads off two mountain grouse just to show her skill with a bow.

Someone should tell her that sportsmen and women do not fish for fish in a barrel, shoot ducks on the water, or birds sitting in the trees.

When someone does that he or she removes themselves from the ranks of sportspersons and assumes the role of butcher. Worse still, by this total lack of respect for a prized game bird, they say it is not a game bird, just some commodity, or even less, just a target.

Through the years I have come to realize that the three R's of sportsmanship are Respect, Restraint, and Renewal. That little episode failed all three. I'm sorry you failed to edit it out and tell the author just why you did.—*Larry Michnevich, Bozeman*

Contributors

The story of the Gardiner late-season elk hunt is really a tale of two hunts, says FWP wildlife biologist **Tom Lemke**. "The early Gardiner hunts date back more than half a century to a time when life in Montana was simpler and harder, and when there were few rules to go by....The modern-day, strictly controlled hunts, which began in 1976, continue today as a much safer and more effective means of managing the northern Yellowstone elk herd." For a look at the Gardiner hunt's colorful past, as well as its modern-day management, turn to "A Montana Tradition" beginning on page 2. Lemke, who lives in Livingston, is assigned to the department's Region 3 (Bozeman) office.

Lemke

At home on every continent except Antarctica, ospreys have cruised the planet's waters for 10 to 15 million years. In this issue's "Watchable Wildlife" installment (p. 10), **Deborah Richie** traces the pesticide-related decline of the "Artful Angler" in the 1950s and '60s, and its gradual recovery following the ban of DDT in 1972. Today there are more than 500 nesting pairs of ospreys in Montana, up from about 150 in 1978. Richie is the watchable wildlife coordinator for the U.S. Forest Service in Missoula (a cooperative position with The Nature Conservancy).

The tundra swan is a common spring and fall visitor to Montana, so it was a natural choice for this year's state waterfowl stamp contest. When the judges' votes were tallied a few months ago, Polson artist Wayne Dowdy's colorful rendition of four swans set against a dramatic backdrop of the Rocky Mountain foothills west of Freezout Lake had edged 13 other entries for first-place honors. For a look at Dowdy's winning painting plus the second- and third-place entries, turn to **William Phippen**'s article on page 16. Phippen is an information officer at FWP headquarters in Helena.

John Fraley and **John Grant**, authors of this issue's "Lands Legacy" segment (p. 19), claim that western Montana's Ninepipe Wildlife Management Area is nothing short of "Pheasant Heaven." The area's natural attributes plus intensive vegetation management make it one of the state's most popular—and productive—upland bird hunting areas. Despite heavy hunting pressure, pheasant numbers remain high. Fraley is FWP's information officer in Kalispell, while Grant, who lives in Charlo, is the wildlife area manager responsible for Ninepipe WMA.

Grant

According to FWP wildlife biologists **John McCarthy** and **Jim Williams**, mountain lion populations in Montana are growing even as mortality from hunting and other causes is on the increase. In their article, "Cougar" (p. 24), they explain why this is so, offer some perspectives on human/lion interactions, and summarize results of the Sun River Mountain Lion Study, a research effort jointly sponsored by FWP and Montana State University's Fish and Wildlife Management Program.

Williams

Williams, working under the direction of Professor Harold Picton, studied the Sun River lions while working on a master's degree at MSU. McCarthy and Williams are stationed in Augusta and Great Falls, respectively.

McCarthy

Readers will note that this issue's "Perspectives" (p. 29) has a distinctly different look. In celebration of the Montana Fish, Wildlife & Parks Commission's 100th anniversary, we've reprinted some articles from early issues of the department's first magazine, *Montana Wild Life*. We think you'll enjoy the old-time design of these articles and through them gain a better appreciation of the challenges faced by Montana's pioneers in wildlife conservation.

MO thanks the following photographers for their contributions to this issue: **Pete & Alice Bengeyfield**, and **W. Steve Sherman**, Dillon; **Dale Burk**, Stevensville; **Alan & Sandy Carey**, and **Dusan Smetana**, Bozeman; **John R. Ford**, Land O' Lakes, WI; **Michael H. Francis**, Billings; **Brad Garfield**, Tremonton, UT; **Rocky Heckman**, and **Jim Mepham**, Choteau; **Donald M. Jones**, Troy; **Gary Kramer**, Willows, CA; **Scott McKinley**, Jackson, WY; **Bill McRae**, Fairfield; **Ron Spomer**, Troy, ID; **Keith A. Szafranski**, Livingston; **Jan L. Wassink**, Kalispell; and **George Wuerthner**, Eugene, OR. Thanks also to the following contributors who work for the department: **John Fraley**, Kalispell; **John Grant**, Charlo; **Tom Lemke**, Livingston; **Liz Lodman**, **Steve McMorran**, and **Tom Palmer**, Helena; **Bill Thomas**, Missoula; and **Jim Williams**, Great Falls.